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Know In Time'

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of the Industry

'Partial' Sales Ruled Part of Dealer's Quota

'Freeze' Order Rulings
On Transfers, Excess
Stock, Chain Stores

WASHINGTON, D. C.—The War Production Board last week issued an interpretation of the "freeze" order L-5-b, ruling that refrigerators that were sold, leased, or traded before 10 a.m. (eastern war time) Feb. 14, but not delivered, shipped, or transferred until after that time, are to be included as part of the retail sales quota permitted under the freeze order.

The freeze order applied to all manufacturers, distributors, and retailers to sell one-twelfth of the number of refrigerators sold by them in 1941 or 100 new refrigerators, whichever is greater.

Stocks in excess of that amount must be held, and retailers may not acquire new stocks to make up the permitted quotas for retail sale.

No Time Limit on Sale Of Dealer's Allotment

The headline "dealers get allotment to sell to April 30" was not in accord with interpretations of the freeze order made by the WPB. There is no time limit on the sales which retailers of refrigerators are permitted to make under the allotments set for them.

In another interpretation affecting "chain" dealerships—those operating a number of stores in one community—the WPB has ruled that the limitation on sales applies to the organization rather than to the individual outlets, which are not considered to be independent establishments.

This means that such chain dealerships are limited to sales of 100 units, or $\frac{1}{12}$ of their total 1941 sales, whichever is greater, through their entire organization, without regard to the number of individual stores which it may comprise. This ruling, it is understood, also covers local operations of national chain-stores selling refrigerators, such as Sears and Montgomery Ward.

It was also officially stated last week that the order does not affect the production of replacement parts, which will continue unrestricted.

Refrigerators produced up to April 30 will be frozen and will aid in the building of a stockpile that will total approximately 750,000 units, which will be available only for essential civilian and military requirements.

AIR CONDITIONING & REFRIGERATION NEWS posed three major questions on the interpretation of the "freeze" order to the WPB, which were replied to by W. S. Hammersly, chief, Refrigeration and Air Conditioning Section, Electrical Products and Consumers' Durable Goods Branch, as follows:

Question 1: May dealers transfer part of their stock to other dealers without having such transfer count as a retail or wholesale sale?

Answer: "Dealers may not transfer stock to each other without specific instructions from the Director of Industry Operations."

Question 2: Can dealers complete sales and deliver refrigerators on which down payments were made prior to Feb. 14, without having such sales count in their allotment?

Answer: "Question No. 2 cannot be answered in a general statement. We must know the facts. However, (Concluded on Page 16, Column 1)

Air Conditioning & REFRIGERATION

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Refrigeration Priorities Business Bound To Increase as War Effort Expands

New 'Cold' Annealing Unit Self-Contained

ST. LOUIS—Among the recently unusual direct applications of refrigeration called up by the demands for speed and perfection in the construction and assembly of modern weapons of war is the automatic



Automatic annealing machine.

annealing of rivets used in aircraft assembly.

The refrigerated annealing machine manufactured by the Hussmann-Ligonier Co., illustrated above, is used to anneal automatically, by electric refrigeration, the rivets used in airplane assembly.

Control of temperature within the close limits demanded is accomplished by the Penn model 1260P3 lowside pressure unit, controlling the operation of the condensing unit.

U. S. Announces Locations Of 7 Training Camps

WASHINGTON, D. C.—Names for seven U. S. Army training camps have been announced by the War Department. Camps designated and their locations are as follows:

Camp White, Medford, Ore.; Camp Atterbury, Columbus, Ind.; Camp Gruber, Cookson Hills, Okla.; Camp Butner, Durham, N. C.; Camp Carson, Colorado Springs, Colo.; Camp Campbell, Clarksville, Tenn., extending into Kentucky; and Camp Hood, Killeen, Tex.

Penn Switch Re-locates Chicago Offices

CHICAGO—Penn Electric Switch Co.'s Chicago office has moved from 844 Rush St., to 520 N. Michigan Ave. Telephone numbers remain unchanged.

Knight Points Out Growth of Jobs In Use By Army, Navy

CHICAGO—"The Army and Navy and their various subdivisions have and are purchasing millions of dollars worth of mechanical refrigeration equipment, and the smart refrigeration dealer and contractor is familiarizing himself with the Army purchasing and maintenance procedure to get himself a share of this A-1 priority business when the opportunity comes along," declares M. W. Knight, assistant to the president, Peerless of America, Inc.

"It has been demonstrated to me that some local dealers and contractors have been getting some of this business," says Mr. Knight. "This has been true where an increase has been made over the original facilities in some of the cantonments. Also, many of the installations in U.S.O. buildings throughout the country have been equipped by dealers.

"In buying refrigeration equipment the government has apparently been working on the theory of buying the equipment and forgetting about it. However, it is obvious that some maintenance work will have to be done, and this offers opportunities for local contractors."

The government has purchased large quantities of commercial refrigeration equipment direct from manufacturers and will soon buy more, with the expanded training program that is coming up.

"There are on the docket today plans to purchase equipment for at least 28 new cantonments within the next year," Mr. Knight explained. "It is probable that each one of these cantonments will use at least \$35,000 worth of equipment.

"There are many health centers being constructed which will contain refrigeration, and aviation schools have been active purchasers of refrigeration equipment.

"The navy is buying several hundred small sized air conditioning units and all types of refrigeration storehouse equipment and portable refrigeration units."

Mr. Knight calls attention to the more than 12,000 65-cu. ft. reach-in refrigerators (of the type shown in the illustrations) that were converted from ice refrigeration to mechanical refrigeration. These units are installed in the mess halls of the various cantonments in the U. S.

For the refrigerators illustrated in the accompanying photographs, a $\frac{1}{2}$ -hp. International Harvester air cooled condensing unit was used (a variety of makes of equipment went into these jobs). The temperature maintained in these boxes is 38°-40° F. Refrigeration in these particular boxes is obtained through the use of a special D-40 dome evaporator.

The space formerly occupied by ice is now added storage space for produce. The condensing unit is installed off the floor and is completely protected by a wire mesh enclosure.

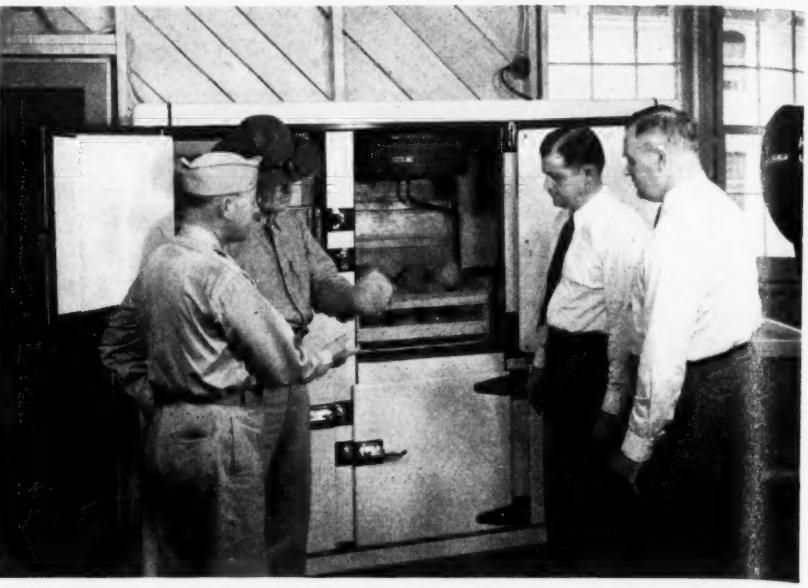
Distributor Making Ammunition Boxes

DETROIT—Refrigeration Sales Corp., a distributor of commercial refrigerator equipment and units in this territory, has secured a prime government contract for the manufacture of ammunition boxes.

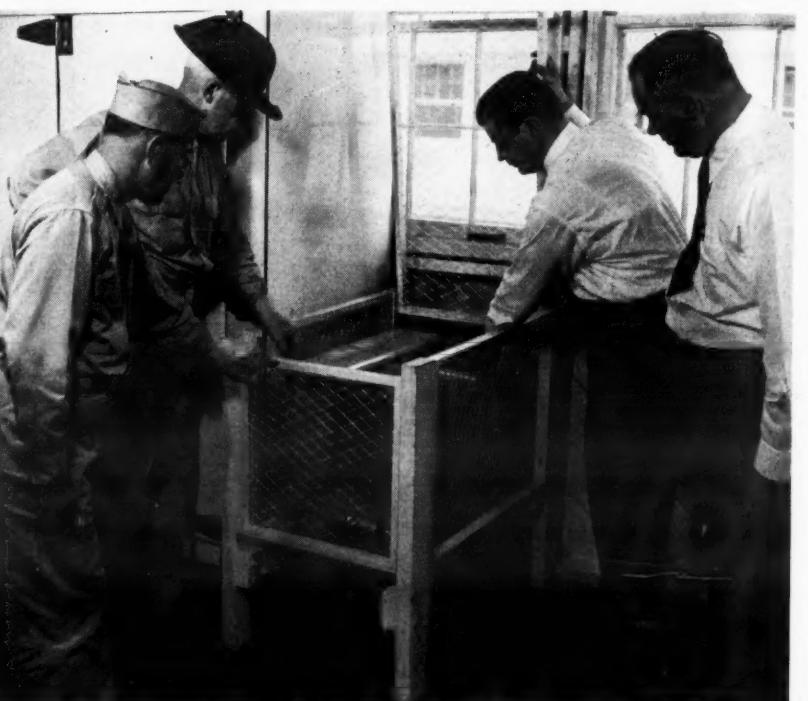
In its operations as a distributor of commercial refrigeration the firm has established a fixture fabricating department of fair-sized proportions, so that its adaptation to the manufacture of ammunition boxes was fairly simple.

"We had been reading about the trends for the industry as a subscriber to REFRIGERATION NEWS, and from this and other evidences it was obvious that there was to be some curtailment of our business, so we set about for a way to fill out our own operations.

"We checked into the various government contracts that were open and bid on one that we thought we could do. It turned out that we had the low bid so we got the job—and that's about all there was to it."



Lieut. Com. D. H. Finley, post quartermaster of Camp Meade (right) and Capt. D. W. Caven check a chilled melon taken from one of the refrigerators in the camp as E. B. Derr, assistant sales manager of the International Harvester Co. refrigeration department, and another company representative, look on. Note storage space where ice was once kept.



Mechanical refrigeration unit operates right alongside the refrigerator.

YOU CAN'T DENY IT!

- a
BETTER DRYING
AGENT does a
BETTER JOB!



That's logic. And—with your 1942 responsibility—you can't afford to use a drying agent that hasn't proved its superiority! Davison's Silica Gel has won its position as the industry's preferred drying agent on this one point—it does a better job! Service engineers and manufacturers alike say that Silica Gel's capacity, speed, acid removal and freedom from dusting is helping them keep America's refrigerators running—has helped them eliminate the break-downs caused by moisture.

If you've never used Silica Gel, you have an experience coming to you. Try it and see for yourself how it fits in with your plans to do your part in Civilian Defense.

Your Jobber stocks Silica Gel charged dehydrators and Silica Gel in bulk.



THE DAVISON CHEMICAL CORPORATION
SILICA GEL DEPARTMENT
BALTIMORE, MARYLAND

VIRGINIA—a name that has earned respect

The fundamentals of American Foreign Policy, as they affect the nations of this hemisphere and their relations with Europe and Asia, find expression today in President Roosevelt's Good Neighbor Policy, and were first embodied in The Monroe Doctrine. The principles of The Monroe Doctrine were the contribution of two great Virginians, Thomas Jefferson and James Monroe.

The Virginia Smelting Company, too, has a long established "good neighbor" policy of its own. That policy, and the Company's successful growth and position in the industry today, trace directly to one belief:

"Nothing will benefit this Company that does not benefit the entire Industry."



"VIRGINIA" REFRIGERANTS
AGENTS FOR KINETIC'S "FREON-12"
VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA



American Coils Develops Special Test Unit And an Oil Chiller For Industrial Plants

NEWARK, N. J.—Two new products which may prove helpful to refrigeration dealers in broadening their sales field during present conditions have been developed by American Coils, Inc. here.

First of these is the Amcoil "Minus 50" test cabinet, using dry ice; the second is a circulating oil chiller using mechanical refrigeration. Both of these units are used in defense plants, the test cabinet for testing products used in planes or other equipment which may be used under low temperature conditions, and the oil chiller for cooling the

cutting, quenching, or grinding oils on automatic production machines such as are used today.

The test cabinet has a fan motor mounted on its top, so that it is not affected by cooling chamber temperatures. Dry ice is loaded from the top, and capacity of the cabinet is 50 pounds. Temperatures as low as -50° C. can be obtained and held in the cabinet, it is claimed. Spy door has five heavy plate glass thicknesses, and the entire cabinet has 6 inches of glass-wool insulation.

Storage capacity of the cabinet is 6.09 cu. ft.

Westinghouse Develops a Plan For Improving Dealers' 'Appliance Service'

MANSFIELD, Ohio—The fact that profitable dealer service of electrical appliances is one "product" upon which war has not placed limitations has been the principal guide in formulating the 1942 service program of the Westinghouse merchandising division, reports L. K. Baxter, service manager.

"Good service is regarded as an essential stock-in-trade for appliance dealers," Mr. Baxter said. "Especially now, service may be the life-saver for many dealers, with curtailments on the production and sale of new products. Service kept some dealers in business in the last war; the same will be true during this war.

"Conservation and efficiency in American homes are national keynotes, declared by our government to be essential to the war effort. Service for existing electrical appliances, therefore, is more important now than ever before."

Westinghouse has planned its 1942 service program with a definite "product" slant. Service is treated as an activity which a dealer may freely merchandise and sell, giving free play to his own ingenuity and energy.

Chief dealer-helps in the program are:

1. Full local promotion campaign, including store displays, suggested direct-mail solicitation of service business, and consumer literature.

2. Identification, including special service signs for dealer stores, decalcomania panels.

3. "The Service Beacon," illustrated magazine written and edited for dealer employees engaged in servicing appliances; goes out periodically to every Westinghouse service man.

4. New sound-slide film, "Can You Make It Better," portraying the need for precise service habits—in receiving calls for service from appliance users, in answering calls, in the conduct of service calls in customers' homes. The film is being shown to Westinghouse service men throughout the country.

5. Schools for dealers and service men, conducted by service supervisors and distributors' service supervisors.

6. Pocket-size "quick-check guide" for service men, a handy reference of procedure in examining appliances to ascertain the cause of complaint.

7. Qualified service men's club, an organization of service men to focus their attention on the importance of conscientious service efforts to themselves and their firms.

"In this program, Westinghouse has outlined full specifications of what seems to be the one thing which dealers can sell to the hilt—their service facilities," Mr. Baxter said. "We have backed these specifications with promotional material, an identification program, advertising and training, and educational efforts. Headquarters and field organizations have been expanded to help dealers accomplish real strides in the service business."

Tire and Tube Quotas

Larger For March But

Retread Rationing Lags

WASHINGTON, D. C.—March tire and tube quotas substantially larger than those provided for rationing to eligible vehicles in the preceding month were made public last week by Price Administrator Leon Henderson.

For List A passenger cars, light trucks, and motorcycles, the March quotas provide a total of 104,701 new tires and 87,635 new tubes, against 80,784 new tires and 67,616 new tubes for these vehicles in February. The March quotas for List A trucks, buses, farm equipment, and other heavy vehicles total 256,385 new tires and 288,149 new tubes compared with 156,029 new tires and 267,562 new tubes in the previous month.

Retreaded and recapped tires available for rationing in March to eligible trucks, buses, farm equipment, and other heavy vehicles aggregate 110,225. There is no fair comparison of this figure with February, since rationing of truck retreads did not begin until the 19th of that month and the first quota covered only nine days.

No retreaded passenger car tires will be available for rationing in March, since the War Production Board has not authorized the manufacture of passenger car camelback during that month. This means that only new passenger car tires and tubes will be rationed during March and their sale will be restricted to vehicles on List A of the eligibility classifications.

Hence, for another month, at least, no passenger car on List B of the eligibility classifications will be able to get a retreaded tire. However, trucks qualifying under List B can apply for retreaded or recapped tires between March 1 and March 20.

Hurley Given Permission To Make Repair Parts

WASHINGTON, D. C.—Suspension Order S-11, issued against the Hurley Machine division of the Electric Household Utilities Corp., Chicago, has been amended to permit the company to make deliveries of spare parts required for repairs to its electric washing machines and electric ironing machines, now in the hands of its customers.

The company has requested that the Suspension Order, which prohibits all transfers and deliveries of electric washing and ironing machines, and spare parts for them, until Aug. 1, 1942, be stayed. The War Production Board, however, saw no reason to invalidate the order, which had been imposed after investigation disclosed that the company had exceeded the production quota permitted it under Limitation Orders L-6 and L-6-a.

The amendment means that owners of the company's products will not suffer because of the penalties imposed upon the manufacturer, says the W.P.B.

Hainsworth To Address Detroit ASRE Group

DETROIT—Dr. William R. Hainsworth, vice president, Servel, Inc., and national president of the American Society of Refrigerating Engineers, will speak at a meeting March 11 of the Detroit section of A.S.R.E. Dinner and the meeting will be at the Rackham Foundation.

Dr. Hainsworth will speak on "Gas Fired Air Conditioning." Prof. A. L. Hesselschwerdt of Wayne University, vice chairman of the Detroit section, will give a demonstration and talk on "Calorimetry and Its Importance to the Refrigeration Industry."

Sales Setup Announced For 'Frostrode' Refrigerated Welding Machines

DETROIT—"Frostrode" units, the new type of refrigerating units for welding machines, are now being manufactured and marketed to welding equipment manufacturers by Weltronic Corp., 3080 East Outer Drive here, following its acquisition of all patent, manufacturing, and sales rights to the new units originally developed by Progressive Welder Co., Weltronic's new Frostrode division disclosed.

Sales of the "Frostrode" units to users will be handled by manufacturers of welding equipment and the York Ice Machinery Co., while installations will be supervised by Weltronic Corp., York Ice Machinery Co., or the welding equipment manufacturers.

Developed primarily for those tough welding jobs where water-cooling has proven inadequate, such as in the welding of aluminum or heavy steel sections, the "Frostrode" process makes possible a material reduction in operating costs for resistance welding equipment of all types, according to its manufacturer.

"Frostrode" units make practical continuous welding of four to ten times as many spots in aluminum without requiring point dressing. Aluminum is one of the most critical metals to weld because of the low electrical resistance and high current values required, with the resulting inclinations towards alloying of the metal with the electrode because of the high heat generated.

In the welding of heavy steel sec-

tions the long weld time and high point pressure required result in high surface heat with consequent mushrooming of electrodes, short electrode life, faulty spots, and frequent and protracted down time for the machines.

In both cases the "Frostrode" cooling process removes this heat as it is generated, decreasing pick-up of the aluminum and the heat-induced mushrooming of the electrodes. These units materially reduce water consumption since water is used only "as required" to maintain brine temperature, the company stated.

Weltronic has announced that its new "Frostrode" units are available in five standard sizes, ranging in their capacity from light steel spot welding for the small unit to the largest unit for use with either a heavy steel welder or a bank of eight aluminum welders. Completely self-contained, the refrigerating units are simple to install.

When used in connection with a spot welding machine, the refrigerating units reduce electrode temperature to a point where electrodes will be continuously covered with frost in spite of the high heat necessary to produce a weld. As a result the life of the point is so increased that 10-minute runs, at 100 welds a minute, on aluminum without point dressing are not unusual—even on tough jobs.

All types of Weltronic "Frostrode" units are provided with automatic thermostatic control, built-in dehy-

drator, heat exchanger, external indicating thermometer, highest efficiency pump with variable pressure, and all standard safety appliances.

Repair—Don't Replace Is Gov't Hint To Plumbers

WASHINGTON, D. C.—"Plumbing contractors, instead of supplying new and shiny plumbing fixtures as they have done in the past, would be making a distinct contribution to the war effort to suggest repairs," declared W. W. Timmis, chief of the WPB Plumbing and Heating Branch in an appeal addressed to plumbing contractors.

"The outside finish of a unit need not be new, as long as the inside working parts are in good condition," he stated. "In this way, each and every individual can assist in the prosecution and in the winning of the war."

He further pointed out that the demand for plumbing equipment far exceeds the available supply.

Minneapolis Dealers Elect New Officers

MINNEAPOLIS—George H. Johnson was elected president of the Minneapolis Electric Appliance Dealers organization for 1942 at the group's recent annual meeting. C. B. Annis was named vice president, W. G. Stuefer, secretary-treasurer, and William Ritt, manager.

Directors elected were E. C. Beecher, R. H. Gustafson, Riley Whitmore, and Earle Williams.

"Food is a Whole Arsenal of Weapons"

...and it must not be sabotaged! From the vast and fertile acres of America must come the greatest production of food in history to serve our people at war.

Before it reaches the fighting men who will hammer out the victory...the workers who provide the arms...and civilians' families here and among the United Nations, a great proportion of that food requires refrigeration to keep it wholesome, to prevent its loss through spoilage.

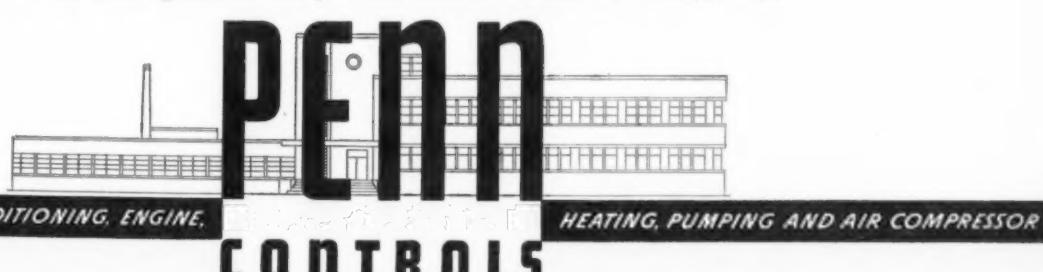
So, Secretary of Agriculture Wickard headlined the vital service of commercial refrigeration when he put food near the top of the list in democracy's arsenal of weapons. Refrigeration on trucks, trains and ships, in warehouses, stores and markets, must be on guard, day and night, to prevent sabotage to our food supply by waste and spoilage.

Through years of peace, Penn has supplied a complete line of automatic controls which by their efficiency, dependability and adaptability



have won a place of outstanding leadership for this company in the commercial refrigeration industry.

We recognize the responsibility of such leadership during the emergency of war. Our resources, naturally, must be devoted first to the direct requirements of the fighting forces. But, we shall do our utmost to supply Penn refrigeration controls to manufacturers and service men, and with the least possible delay. *Penn Electric Switch Co., Goshen, Ind.*



REFRIGERATION, AIR CONDITIONING, ENGINE,

HEATING, PUMPING AND AIR COMPRESSOR

Priorities Information

Priorities Regulation No. 3

Effective Date for Using PD-1A & PD-3A Forms Changed to March 15 by New Order

WASHINGTON, D. C.—The date on which PD-1A and PD-3A forms must be used in place of forms PD-1, PD-3, PD-4, and PD-5 has been postponed from March 2 to March 15 by Amendment No. 1 of Priorities Regulation No. 3, issued Feb. 25 by the Director of Industry Operations.

Other changes in Priorities Regulation No. 3 are as follows:

The Selective Service System has been added to the list of agencies by which PD-3A's will be issued. In conformity with procedure already established, the use of PD-3A certificates by the Procurement Division of the Treasury and by the Surplus Marketing Division of the Department of Agriculture has been specifically confined to Lend-Lease contracts. PD-1A certificates may also be used to rate purchases under Lend-Lease contracts or purchases by or for the account of foreign governments.

An addition to paragraph (a) provides that after March 15 preference ratings which have been assigned prior to that date on PD-3, PD-4, and PD-5 certificates must be extended in conformity with the pro-

visions applicable to PD-3A.

Another new paragraph, (e) (5), provides that the extension of preference ratings assigned by PD-3A certificates may be subjected to such further provisions as may be prescribed by Supply Arms or Bureaus of the Army or Navy, with the approval of the Army and Navy Munitions Board and the Director of Industry Operations.

Additional Benefits Are Given PD-1A Users Under Order No. 3

DETROIT—For those who use Form PD-1A to get preference rating certificates, there are certain provisions in Priorities Regulation No. 3 and its interpretations which should be studied so that suppliers will obtain the maximum benefits from the use of the PD-1A forms. (Copies of Priorities Regulation No. 3 and its

attendant interpretations should be obtainable from your local priorities office.)

Priorities Regulation No. 3 allows the recipient of an individual rating, his suppliers and sub-suppliers, to employ the rating for replacement in inventory of materials used in filling the rated order, provided such replacement does not increase inventories above a practicable working minimum.

If the materials to be replaced are manufactured, processed, or otherwise physically changed by the supplier, the rating must be extended while the materials are in process of fabrication. For materials which are not processed or otherwise changed by the supplier, extension of the rating may be deferred up to three months, until an order can be placed for the minimum quantity procurable on customary terms. This provision is primarily for the benefit of wholesalers and distributors, enabling them to group their own orders while making deliveries in small quantities.

This regulation also allows a supplier or sub-supplier who has received two or more purchase orders bearing ratings of the same grade to include in a single purchase order or "basket," within the limitations which have been indicated above, any or all of the material which he requires to make deliveries in accordance with the rated purchase orders which have been served upon him. In such cases, he must specify in the certification on his own purchase order all of the Preference Rating Certificate form numbers and serial numbers referring to the orders in connection with which he is extending the ratings.

Questions and Answers—

Interpretations Help Clarify Questions

Regarding Use of PD-1A & PD-3A Forms

WASHINGTON, D. C.—Questions and answers to clarify the use of PD-1A applications and PD-3A certificates for individual preference ratings have just been released by the Division of Industry Operations, WPB.

PD-1A is to be the standard form for individual applications for priority assistance and PD-3A is the form on which individual ratings are assigned by Army, Navy, and other Government officials. The use of these forms has been optional since Feb. 2 and will become mandatory on and after March 15.

When do I use the PD-1A application blank?

An application may be made on a PD-1A form for a priority rating to obtain any material or supplies which you cannot obtain without a rating or by use of any rating to which you are already entitled.

SEPARATE APPLICATIONS

Do I have to make out a separate application for every order to be placed with each of my suppliers?

Only when you are ordering different kinds of supplies or supplies to be used for different purposes. If you are assigned a rating to cover 100 tons of steel which is all to be used for the same purpose, you may use the rating on orders for 50 tons from one company, 25 tons from each of two others, etc. You may not use it, however, to obtain a larger total quantity than the amount approved on the certificate. If you need 50 tons of steel for one product and an additional 50 tons for another product, you must make out two separate applications.

What do I do with the PD-1A form when it is returned to me with a rating assigned by the Bureau of Priorities?

Keep the approved form in your file and apply the rating by endorsement of your purchase order. You do not need to send either the original or a copy to your suppliers as you did with the old PD-1 forms.

HIGHER RATING

May a PD-1A form be used to apply for a higher rating when the rating assigned by a blanket order or a previously issued certificate is not high enough to secure delivery of the materials required?

Yes, provided you accompany it with evidence that you have made every possible effort to obtain the material with the rating originally assigned.

Who may issue ratings on PD-3A forms?

The Army or Navy official who signs the purchase contract assigns appropriate ratings on a PD-3A form or a rating may be assigned by other authorized Army and Navy officials. Designated officials of the Maritime Commission and certain other specified government agencies and foreign governments may also issue PD-3A certificates.

Is the Army or Navy required to give me a PD-3A certificate when they place an order with me?

No. Preference ratings are not usually assigned to certain classes of materials, and the Army and Navy may refuse to assign ratings when they consider the assignments unwise.

USES OF PD-3A

Will preference ratings be granted on Form PD-3A for materials not listed on the Army and Navy Priorities Critical List?

Yes. The Army and Navy Priorities Critical List has been abolished as a limiting factor for the issuing of preference ratings by field officers.

May PD-3A be used for repair, maintenance, and operating supplies?

Yes, if you are a prime contractor for the Army or Navy or a subcontractor whose dollar volume of orders on hand is 50% or more in Army or Navy contracts. Subcontractors will not be permitted to use PD-3A's for repair, maintenance, and operating supplies after June 1, 1942. If you are a subcontractor, it would be best for you to apply for preference ratings under the Production Requirements Plan.

Must the endorsement by which I extend PD-1A and PD-3A be on the actual purchase order?

It must be sent as a part of the purchase order, but a separate form may be printed and attached to the purchase order to carry the properly signed endorsement.

May I extend a PD-3 which I have received, by the procedure described for PD-3A?

After March 15, previously issued PD-3's must be extended by the procedure described for PD-3A. Until March 15, PD-3 should be extended only by the PD-3 procedure unless the cost of material to be processed is under \$500, in which case extension by endorsement has been authorized.

EXTENSION PROCEDURE

May I extend a PD-1 by the procedure which has been described for PD-1A?

Do I have to make out a separate application for every order to be placed with each of my suppliers?

Only when you are ordering different kinds of supplies or supplies to be used for different purposes. If you are assigned a rating to cover 100 tons of steel which is all to be used for the same purpose, you may use the rating on orders for 50 tons from one company, 25 tons from each of two others, etc. You may not use it, however, to obtain a larger total quantity than the amount approved on the certificate. If you need 50 tons of steel for one product and an additional 50 tons for another product, you must make out two separate applications.

What do I do with the PD-1A form when it is returned to me with a rating assigned by the Bureau of Priorities?

Keep the approved form in your file and apply the rating by endorsement of your purchase order. You do not need to send either the original or a copy to your suppliers as you did with the old PD-1 forms.

When a preference rating assigned on a PD-3A is extended, is it necessary to submit a copy of the purchase order on which the extension is made to any other person?

Yes. One copy of the purchase order is to be sent to the officer indicated on the PD-3A certificate, generally the officer who signed the certification section of the form.

When I extend a rating received on a PD-1A certificate, must I send a copy of the purchase order on which the extension is made to Washington?

No. The original purchase order is sent to the supplier and a copy must be kept in your files. No other copies are necessary.

PRACTICAL MINIMUM

What is a practical working minimum?

A practical working minimum means the smallest inventory which will enable you to keep your production processes operating efficiently. Unless the circumstances are exceptional, this should not be more than a three months supply, or more than the amount of inventory you had on hand a year ago. In the case of certain scarce materials, maximum permissible inventory has been specifically prescribed by the War Production Board.

What is meant by a single kind of material for which a separate PD-1A application must be filed?

Materials included on a single PD-1A application must fall into one common class such as steel, paper, etc. One application may cover several sizes and shapes of steel products, or several items of any other single type or material.

What is meant by a single need or use for which a separate PD-1A application must be filed?

A single need is for a specific quantity of materials to be used in making one product or class of products. A single use is for one or more items of equipment or supplies to be used for a single purpose as described in the application.



DETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

Canadian Representatives—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg



When Westinghouse Men Met



When members of the Westinghouse merchandising division met earlier this year in Mansfield both the household and commercial refrigeration field representatives conferred on their plans for the coming year. In this group (left to right) are H. F. Hildreth, sales development manager,

air conditioning and refrigeration department; M. C. Turpin, Washington, D. C. merchandise supervisor; W. R. Mason, merchandise advertising and sales promotion department; and L. W. Clifford, commercial refrigeration section.



A group of headquarters officials and district managers of Westinghouse form this "family picture." Front row (left to right) are J. E. Hugo, Mansfield, central manager; N. L. Myers, New York City, eastern manager; Frank R. Kohnstamm, general sales manager; C. E. Reid, St. Louis, southwestern manager; E. M. Binns, Philadelphia, middle Atlantic man-

ager; and W. B. Creech, Atlanta, southeastern manager. Back row (left to right) are J. F. O'Donnell, San Francisco, assistant sales manager in charge of the Pacific Coast; C. H. Guy and Reese Mills, assistant sales managers stationed at Mansfield; and S. M. Davison, Chicago, northwestern manager.

Drive-In Restaurant With Big Volume of Soft Drinks Finds Pre-Cooler a 'Necessity'

BIRMINGHAM, Ala. — A "pre-cooler" storage room in which bottled beverages and milk can be brought down to a temperature of 40° F. before moving on into two 9-foot service bottle cases is an outstanding feature of the new Thomas Drive-In Restaurant here.

The new restaurant is a combination of drive-in and table service, seating 50 in a front dining room, and accommodating 70 automobiles in 7,000 square feet of parking space around the building. Owner W. E. Thomas, who designed the new institution, planned the addition of the dining room to appeal to the customer who wants to enjoy dinner at a table, yet demands convenient parking space as well as good food. Part of the lot surrounding is sectioned for diner parking, while food service is extended by 30 car-hop girls to drive-in patrons.

Because approximately 33% of all sales involved either bottled soft drinks or beer, Mr. Thomas has planned unusual equipment facilities to insure an ample supply at the proper temperature. Whereas in standard bottle-cooling methods soft drinks are unloaded from trucks in cases and sorted immediately into the bottle coolers from whence they are served, those at the Thomas Drive-In are cooled several hours, usually overnight, in a 16 x 6 x 9-foot "pre-cooler" room which opens directly upon a truck dock at the left side of the building. Cases of bottled drinks are unloaded directly into the pre-cooler room instead of going into the kitchen service bottle coolers, where their warmth not only puts a strain on refrigerating equipment, but also tends to increase the temperature of already cooled stock on hand.

The pre-cooler room is automatically kept at between 40 and 45° F. by a G-E "gun cooler" which circulates chilled air through the room. Walls are concrete, overlaid with 2 inches of Dry-Zero insulation, and pine boards, sealing it tightly against

heat load. Capacity for 60 average cases is provided. From four to six hours will cool an entire room stock, allowing the restaurant to switch the ready cooled bottles directly to the service coolers without interfering with their temperature. A separate compressor is installed for the pre-cooler room.

The restaurant has a 12-stool fountain, and electric kitchen equipment, including dishwasher, potato peeler, French fryer, grille, toasters, etc. Individual compressors are used for the service bottle coolers, meat storage cooler, and a small kitchen refrigerator.

Packer of 'Baby Foods' Adds Storage Room For Raw Materials

CANAJOHARIE, N. Y.—A special storage room has been erected in the new Beech-Nut Packing Co. plant here for storage of vegetables intended for use in manufacturing strained and chopped Beech-Nut baby foods. The new cooler supplements previously erected coolers, among which is a room for cooling liver used in beef-and-liver soup for infants.

Preparation of baby foods requires that only best-grade vegetables be used, and that these be in the best possible condition when processed for canning, so that proper cooling and storage facilities are of more than ordinary importance to manufacturers of such products.

Walls of the cold room are insulated with one 2-inch and one 3-inch layer of Armstrong's corkboard, while two layers of 3-inch corkboard guard the ceiling. Corkboard also is used in the floor slab. Metal clad cold storage doors were built by Jamison Cold Storage Door Co.

What to Check When Electric Motor Does Not Start

Motor Troubles & Their Correction

Editor's Note: Following material is part of a section in the series of articles on motors written by R. A. Fuller of General Electric Co.'s industrial engineering department—a section on service.

By R. A. Fuller,
Industrial Engineering Dept.,
General Electric Co.

Complaint - -

B. Motor Does Not Start

5. Loose Connection

"Loose connection" can occur in the wiring, in the controls, or in the motor windings. Open circuits in the stator and rotor windings of the motor are covered elsewhere. A loose connection in the wiring or controls can be located by a test lamp as covered in the section on "No voltage at the Motor Terminals."

A loose connection may make good contact, when the terminal of the test lamp lead is pressed on it, and make poor contact when this pressure is removed. A connection may test satisfactorily with the test lamp and still have enough resistance to

cause excessive loss of voltage when the motor is attempting to start. It is well, therefore, to tighten all terminal nuts and screws and check other joints in the wiring to see if they feel loose.

6. Winding Is Burnt Out

"Winding is burnt out" is a complaint that usually is accompanied by obvious indications such as the sharp, distinctive odor of burnt insulation and a roasted out appearance of the winding. A rewinding job is almost invariably required and this should be done by a qualified motor repair shop.

A slight amount of smoking of a motor may not seriously damage it. In cases where the customer has shut the equipment down fairly soon after it started smoking, the service man's problem may simply be to locate the cause of the overheating, correct it, and restart the equipment.

When only part of a winding has been burnt out it may sometimes be possible to operate the motor on an emergency basis. Such operation is covered in the sections on open circuits and short circuits in the stator and rotor windings. Note particularly that a roasted out coil will very probably be short circuited and, if so, it must be cut completely in two as covered in Section A6 on

"Short Circuit in the Stator Winding." Failure to do this will result in excessive heat being generated in the short circuited coil.

7. Motor Bearings Are Frozen

"Motor bearings are frozen" so tightly to the shaft that the motor does not have power enough to overcome the bearing and load friction. This trouble will, of course, occur only unusually on sleeve bearings. It can readily be checked by removing the belts and attempting to rotate the motor by hand. The use of a pipe wrench on the shaft extension, or any other means of getting leverage to break the motor loose, is hazardous as it will quite possibly cause a bent shaft. If it is found possible to break it loose in some such way the bearing should be kept well supplied with oil and the motor turned over slowly for some time. Then run it with the belts off for fifteen to thirty minutes to make sure that it does not overheat when operating without load. Then replace the belts, checking the belt tension carefully to make sure that it is not excessive, and watch the operation for another half hour or more.

It is advisable to always take the motor apart and inspect both the shaft and bearing surfaces for damage. Scored shafts should be replaced or turned down—preferably replaced to avoid the necessity of matching the new diameter of the turned down shaft with that of the bearing. Damaged bearing sleeves should be replaced. Bent shafts can sometimes be straightened by a competent motor repair man.

For Dependable Power

On War Industries' Air Conditioning Installations Look to CENTURY MOTORS

They provide these advantages:

1. High starting torque necessary to handle modern compressors under unusual conditions.
2. Quiet starting, quiet acceleration, and quiet running at all times.
3. Unusual freedom from electrical and mechanical vibration.
4. Century's unique bearing bumpers reduce chatter from V-belt irregularities.
5. Cushion base mountings isolate possible vibration from your installation (3 horsepower and smaller).

Selection of the proper Century Motor is an easy matter because of Century's extremely wide range of types and sizes, from fractional to 400 horsepower—all effective in solving the many problems of industrial air conditioning motor drives.

For complete information, call in your nearest Century Motor Specialist—his help may be valuable and he is always at your service.

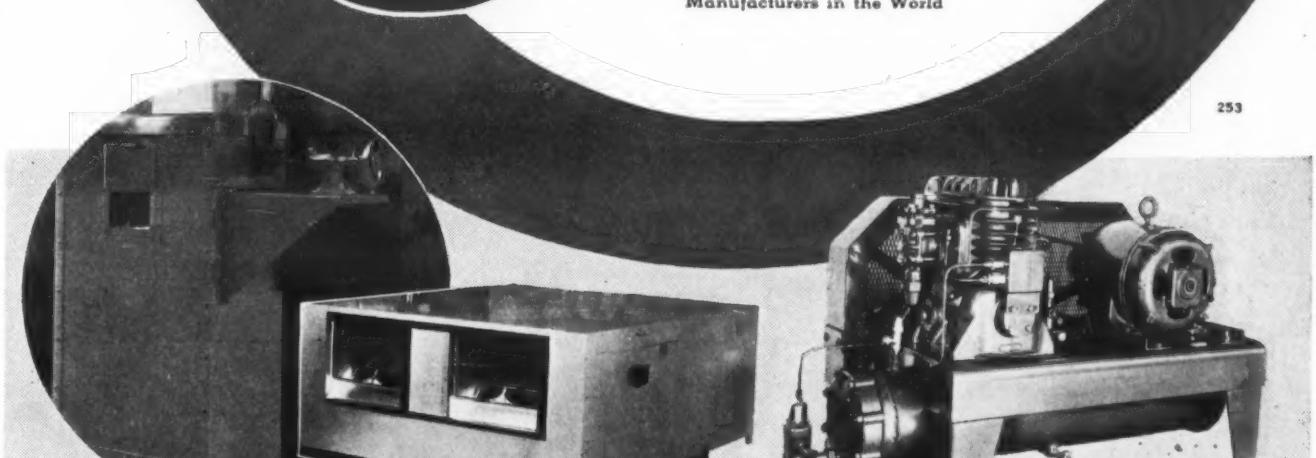
CENTURY ELECTRIC COMPANY



1806 Pine Street St. Louis, Missouri
Offices and Stock Points in Principal Cities

One of the Largest Exclusive Motor and Generator Manufacturers in the World

253



Century Squirrel Cage Motor driving an air conditioning blower.

A Century motor drives the blower fans on this room cooler and heater unit.

Century Squirrel Cage Motor driving a compressor.

Air Conditioning & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office; Established 1926 and registered as Electric Refrigeration News

F. M. COCKRELL, Founder

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MARCH 4, 1942

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Refrigeration Will Help Win the War

Get Priorities Business!

CONTACTS in the field reveal the rather startling fact that altogether too many jobbers and dealers are ignoring the fact that we're in a war. Not only are they being reticent about going after priorities business, but *they are not reporting priorities sales when they get them*.

This may result in a temporarily high sales volume, but it will also result in a rapid depletion of irreplaceable stocks. Eventually, that means that somnolent jobbers and dealers will be out of business.

Manufacturers are not filling jobber's orders in most cases unless accompanied by filled-out priorities forms. But, to too many jobbers, those priorities forms are merely ignored. Fearing they might lose the business, they fail to ask the customer for the priority order. Or, the form looks like too much trouble to bother with.

To jobbers now we say what we have been telling dealers earlier: *Let your competitor have that non-defense business. He'll just be out of the picture that much sooner. If you want to stay in business, reserve your stocks for priority orders. Those you can replace. Non-priority orders you can't.*

If your object is to sell as much as you can as fast as you can and then close up, okay. Go ahead and sell to anybody, and don't ask him if the order deserves priority. But if you want to stay in business, begin now to consider Uncle Sam—and his appointees—your only customer.

There is a higher reason than self-interest for taking this attitude. Now that we are in this war, *we have to win it*. How will you feel if you can't fill an order for Uncle Sam when you receive it? If you sell a part or piece

of material to a non-defense customer now, you may not have it available for Uncle Sam when he needs it.

Patriotically, the jobber can best fulfill his function in war by being ready to supply *priorities orders* quickly. Time is the most important thing in this war—and time is our worst shortage.

True, filling out all those forms is a damned nuisance. So is war. We are all in the same boat. For instance:

An order for \$6 worth of books for shipment by air to Venezuela required five U. S. customs invoices, four Venezuelan customs invoices, two certificates of origins, and ten Pan-American Airways declarations in addition to regular waybills.

You can do your bit by filling only priorities orders. Incidentally, that will be the height of self-interest, for it will insure your survival during the emergency.

QUOTED

BE SURE IT'S NECESSARY

THERE seems to be almost a smug pride in the announcements of some Washington bureaucrats that "many small businesses will go to the wall" because of war emergency regulations and priorities. These gentlemen, many of them drawing comfortable salaries paid by the rest of us, seem to take a certain satisfaction in the thought of the amount of havoc to civilian life their orders will create in the name of emergency, much as the old-time gunmen used to record their prowess by filing notches on their gun handles.

Our appeal is that these dislocating moves be made only after the person responsible has fully weighed the good which can come from the order against the personal dislocation it will cause and the possible adverse effect on civilian morale. Particularly is this true of regulations which threaten ruin to small businesses.

There are years of thought, and labor, and worry, and long, long hours of work wrapped in every fibre of every small business. The owner's heart and body literally are inextricably entwined in it.

The blow is like that to the thousands of workers who lost their homes in the depression. They weren't losing only the \$1,000 or \$2,000 equity they had in the place. They were losing their dreams, and their hopes, and their years of sacrifice and work they had poured into the house in making it into a home. That was the part that turned the knife in the wound.

So it is with these little businesses which seem to mean something less than nothing to some of our young technocrats in Washington. The businesses are part of the owner's very life. They should not be disturbed unless the emergency makes it necessary, and then only to the extent the emergency makes necessary. We ought in all cases to so deal with "close-out" orders that our bureaucrats won't find it necessary to destroy businesses which represent lifetimes of accomplishment this month, and then six months later fish about desperately to revive those same businesses because they suddenly discover the businesses are necessary to the public welfare.—Louis J. Berman in The Whitehall Forum.

IMPROVISED REFRIGERATION

THE present shortage of refrigerated tonnage has been responsible for an improvised method of refrigeration of more than usual interest on the Atlantic route. The necessity of a large amount of cooled shipping space for the great quantity of bacon now being exported to Britain from America has not found the refrigerating engineer wanting, and he has invented a rough and ready method—almost against himself, seeing that the meat comes across without machinery in attendance.

Failing the availability of refrigerated holds, the bacon is stored in the centre of ordinary cargo holds round the walls of which are first piled packages of hard-frozen lard. Now lard is not only a good storage tank for cold, but it is a good cold insulator, so that besides gradually imparting its low temperature to the bacon it protects that merchandise from outside atmosphere.

If care and precision are exercised in arranging these shipments there seems no reason, short of disastrous delay of a boat, for failure to occur at all. Underwriters might, of course, frown at any other time than that of war emergency.—"Modern Refrigeration," London, Jan. 15, 1942.

They'll Do It Every Time By Jimmy Hatlo



LETTERS

JOBBER TELLS MANUFACTURERS HOW THEY CAN HELP

Central Service Supply Co.
409 E. Jefferson St.
Syracuse, N. Y.

Editor:

Following your valiant efforts to awaken the members of our industry in the NEWS prompts me to write a little criticism concerning the manufacturers of both refrigeration equipment and parts. With the exception of a very few companies all the producers have stopped their representatives from calling on the "trade." Almost all of them have stopped sending any literature and the only mail we get outside of invoices is a letter to fill out this form or that form showing defense sales, etc.

There are a great number of helps that most jobbers could receive if the manufacturers would train their field men to learn as much about priorities and the different preference rating orders as is possible and then transmit this information to the wholesaler.

Outside of P-100 there are three other general preference orders that would permit a large number of wholesalers to get materials to sell to their customers. Did the writer learn about these other three from our sources of supply? The answer is No. A great many know of P-100 but how many know about M-67, P-46, or P-55? Countless hours put in at the various OPM (now WPB) offices in this area and other places which business took me to enabled me to pry this information from the men in charge.

Only one manufacturer so far that we know of has undertaken to help the wholesaler with an extensive campaign of mailing every bit of information and forms relative to priorities and that is Revere Brass & Copper Co.

Here is one way the wholesaler can be helped and if all the manufacturers would furnish the information available it would help a lot.

We have had many inquiries from our customers as to how to get materials and priorities and the time the writer used to spend selling is now devoted to keeping up with the regulations and getting this information into the hands of our salesmen and customers.

So we say to the manufacturers: If you want to know one way you can help the wholesaler in '42, read this letter.

THEODORE I. GLOU

CUBAN DEALER WANTS SECOND-HAND REFRIGERATORS

Habana, Cuba

Editor:

As I am an assiduous reader of your REFRIGERATION NEWS, which keeps me in close contact and up to date in the refrigeration field, I have seen in your section "Letters to the Editor" that you furnish whatever information is requested along these lines.

I am an authorized established dealer in this city dealing in second-hand and trade-in refrigerators and, as the situation is getting more and more critical every minute, I am having great difficulties in acquiring second-hand refrigerators for my stock.

I have an idea that there are quite a number of concerns in the States, that sell

on a profitable basis second-hand refrigerators and, presumably, they would be willing to deal with me in a large scale. Therefore, I would like to secure the names and addresses of some of these concerns so that I may get in contact with them.

If you will be kind enough to forward me this information without any inconvenience on your part, I will greatly appreciate it.

A. B. GONZALEZ

SUBSCRIBERS ALL OVER THE WORLD SWEDEN—

Elektrolux Svenska Forsaljnings A.-B.
Servel, Dept.
Stockholm, Sweden

Dec. 4, 1941

Sirs:

Of course we like to continue with our subscription to AIR CONDITIONING & REFRIGERATION NEWS and you are hereby authorized to continue to send us the NEWS for another three years.

We are returning the slip, but on account of the present restrictions in sending currency out of the country, we cannot attach our remittance. However, we are sending a copy of this letter to our associates in New York, Servel, Inc., 51 East 42nd St., and we are asking them to send you a cheque at the amount of \$16 to cover the next three years' subscription.

Hoping this letter will reach you within the next few weeks, we wish to include our greetings for the holiday season and we can assure you, that everything over here is running smoothly and we are all well.

ELEKTROLUX SVENSKA FORSALJNING A.-B.

CUBA—

Compania Electric de Cuba
Havana, Cuba

Sirs:

Will you please add our name to the ever growing list of readers and subscribers the world over?

CHARLES M. VALDES NUNEZ

AND AT HOME

J. M. Weinberger & Co.
35 Homecrest Ave.
Yonkers, N. Y.

Editor:

As a subscriber to your publication, I have always diligently read practically every item in every edition.

Your editorials, so well and authoritatively written, have always been a source of education to me, and particularly now that our country has been called upon to meet an emergency.

For some time now, your editorials have prophesied the trend of our industry and practically without error your prophecies have been 100% true.

Allow me to thank you for assistance gained through your publication in the past, and hoping that it will do as much for your other readers and myself in the future.

JEROME M. WEINBERGER

159 Oliver Rd., Waban, Mass.

Sirs:

Please keep my name on the mailing list and send the bill for the NEWS for 1942 to the above address.

I haven't received it since the first of the year. Please send the back issues which I missed.

You can well understand that I miss getting the NEWS. No need of my telling you it's tops in refrigeration news.

NORMAN C. HONECKER

Retailers Feel OPA Will Allow for Lag in Retail Price Rise

NEW YORK CITY—There is a fair chance that the Office of Price Administration will recognize the principle of time-lag between wholesale and retail price advances in any form of government price control that is put into effect, in the opinion of retail authorities here.

No allowance for this lag was made in the Canadian price control plan, which froze retail and wholesale prices simultaneously. Any substantial application of the Canadian plan in this country, retailers said, would penalize American merchants because of the greater diversity of distribution in this country, and differences in operating costs between varied types of retailers.

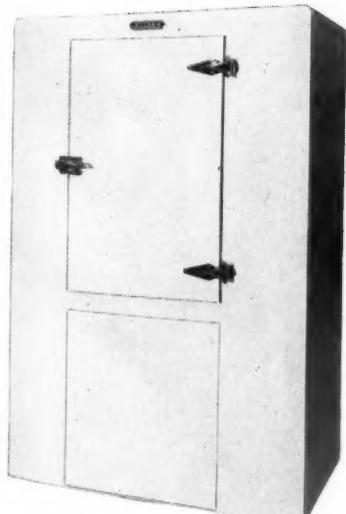
The penalty, it was said, would arise in freezing retail prices behind the advance at wholesale, which would not reflect higher merchandise costs, thus reducing margins and eventually constituting a levy on operating capital. Time-lag between wholesale purchases and sales at retail may be anywhere from a few weeks to more than six months, it was pointed out. To take care of this lag, two suggestions have been made:

1. In the event the OPA finds it necessary to fix retail ceilings on certain items and where increases in cost of goods to retailers have been made during the retailer's period of price lag, the retailer should be permitted to increase his price by adding the same percentage of increase which has occurred in the new merchandise cost.

2. Except in an unanticipated emergency, no retail price ceilings should be established unless ceilings for the retailers' merchandise cost shall have been fixed as of a previous date.

As rationing spreads into more merchandise items, it will be necessary to set up price controls, retailers agreed, since one will not work without the other.

Wilson Markets New 'Home Locker Plant'



SMYRNA, Del.—A new self-contained reach-in quick freezer and "home locker plant" designed for the quick freezing and storage of foods, particularly in the farm home, has been developed by Wilson Cabinet Co., commercial refrigeration manufacturer. The new unit was shown for the first time at the Pennsylvania Farm Show and the Ohio Farmers' Week.

The new cabinet employs both the contact method of freezing with cold plates and the "sub-zero blast" method of forced air circulation to achieve maximum freezing speed.

Operating convenience and simplicity is claimed for the new equipment, which is available in 14 and 22-cu. ft. capacities in the self-contained models, and in 30, 40, 60, and 80 cu. ft. in the sectional models for remote installation. Approximate storage capacity of the smallest model is 500 pounds; of the largest, 3,600 pounds. Refrigeration requirements range from a $\frac{1}{4}$ -hp. unit for the smallest model to $\frac{3}{4}$ hp. for the largest.

The cabinet is insulated with 4 inches of Armstrong Fiberglas and is all-steel, with forged-brass, chrome-plated hardware. Exterior finish is of DuPont enamel.

Car Card Ads Help Build Service Sales

DALLAS, Tex.—Home Furniture Co. here has turned to bus and street car advertising to build volume for its appliance servicing department, which is now operating on an "all-makes" basis.

Bus and street car advertising is proving particularly effective now, the company believes, since recent tire and automobile rationing has caused a marked upturn in the use of public transportation facilities.

Tecumseh's Net Income For 1941 Is \$209,948

TECUMSEH, Mich.—Tecumseh Products Co. for the year 1941 reports net income of \$209,948, or \$1.39 each on 150,000 shares, as compared with \$152,321, or \$1.01 a share, in 1940. Net sales of \$7,292,792 compared with \$3,929,090 in 1940.

G-E Dealer Gets Job For New Air Base

JACKSON, Miss.—A contract for 16 reach-in meat and vegetable coolers for U. S. Army kitchens at the new Jackson Air Base has been awarded the Better Living Appliances, Inc., G-E dealership operated by John Bruno, which also has installed commercial refrigeration at a Federal air school and defense training cantonments in the nearby vicinity.

Despatch Oven Co. Moves Offices From Factory

MINNEAPOLIS—Despatch Oven Co. announces removal of its purchasing, engineering, sales, and executive offices to 722 Central Ave. here, to provide for additional manufacturing and assembly facilities at the factory, which will remain at 622 Ninth St. S.E. Passes to visit factory and engineering department must be obtained at the new office.

555, Inc. Will Make Equipment Line for Bars and Cafes

LITTLE ROCK, Ark.—With its normal sales field considerably reduced as a result of war production requirements, 555, Inc., household and commercial refrigeration distributorship here, has opened a manufacturing division equipped for the making of all types of fixtures for stores and cafes. The new department will be a supplement to the company's regular commercial refrigeration operation.

Store and cafe equipment such as counters, back bars, booths, tables, stools, platforms, and display equipment, including specially built refrigerators, will be built for customers. Designing service will be made available at no extra cost.

Addition of the new department will enlarge the company's service to completely outfitting a bar or cafe. In the past, service has been limited to refrigeration equipment only.

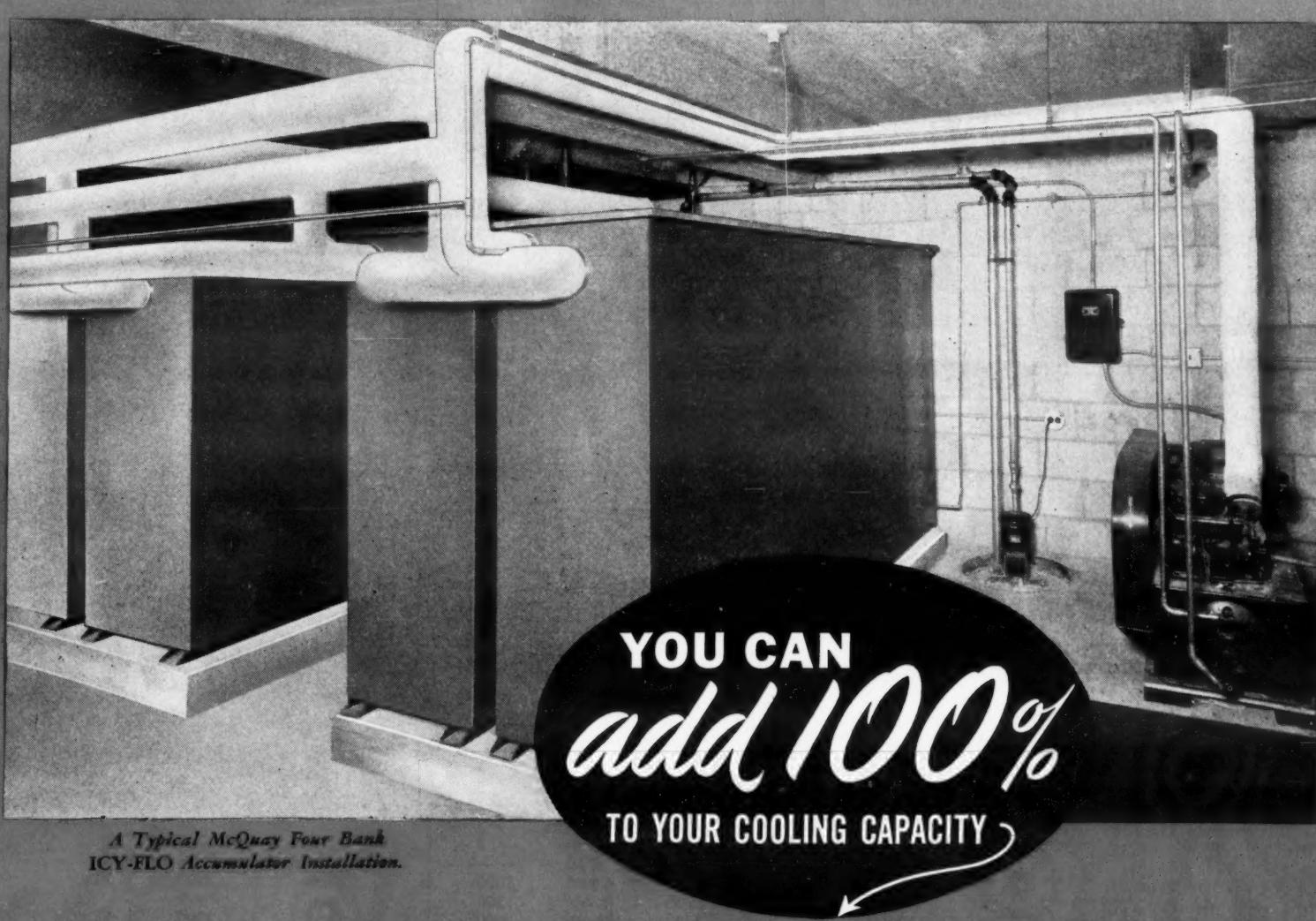
Arbell Supplies Made NRSJA Term Member

CHICAGO—Arbell Refrigeration Supplies, Fresno, Calif., whose partners are G. C. Armour and Charles G. Bell, has been admitted as a term member to the National Refrigeration Supply Jobbers Association, Fred B. Hovey, Jr., association executive secretary, announced.

Edwin F. Tilley, Head of Tilco-Fin, Inc., Dies

BROOKLYN—Edwin Frost Tilley, 61, president of Tilco-Fin, Inc., of Brooklyn, and mechanical engineer, died Feb. 20 at his home in Dunellen, N. J. He was head of the Tilco-Fin, Inc., manufacturer of extended surface tubing for air conditioning, heating, and refrigerating equipment, since the organization of the company in May, 1939.

Born in Locus Valley, L. I., he was graduated from Pratt Institute in 1898 here.



STORED UP COOLING WITH THE McQUAY ICY-FLO ACCUMULATOR SAVES MONEY AND CONSERVES POWER

USE THOSE OFF-PEAK NIGHT HOURS

YOUR present compressor may be able to provide more Air Conditioning capacity by operating during "off-peak" night hours. The additional Refrigeration Effect produced is stored in one or more Icy-Flo accumulator sections . . . This stored refrigeration is then utilized by chilling water to 40 degrees in the accumulator and circulating it through standard air conditioners . . . Capacity added in this way will actually cost you far less "per ton" to own and operate, than your present air conditioning plant . . . Your copy of Bulletin 105, and a set of survey sheets will be sent upon request. Write today, McQuay, Inc., 1607 Broadway St. N.E., Minneapolis. Representatives in principal cities.

m^c Quay

Air Conditioners...Air Conditioning Coils...Blast Coils...Blower Coolers...Comfort Coolers...Cabinet Radiation...Concealed Radiation...Evaporative Condensers...Indoor Cooling Towers...Ice Cube Makers...Icy-Flo Accumulators...Refrigerating Coils...Room Coolers...Unit Heaters...Unit Coolers...Water Cooling Units

SPECIFICATIONS OF CURRENT HOUSEHOLD ELECTRIC RANGE MODELS

Presented on these pages are comparative specifications of electric range models now being produced by 19 U. S. manufacturers, received in response to questionnaires sent out by the News. Initial publication of electric range data last year drew replies from 21 companies, five of which (Crosley, Crawford, Crown, Excel, and Norge) are not included in this year's tabulations. However, three

new lines (A-B, Marion, and Universal) are represented in the listings for the first time.

While the specifications presented herewith give an accurate picture of materials being used by the manufacturers listed in their electric range models at this time, it is important to note that, because of war production requirements, all specifications and materials are subject to change without

notice. The same reservation applies to prices, where these are listed.

This year's electric range listing is identical with that of 1941 except for the addition of data regarding materials used in the "thrift cooker" well, and in the pail and lid. Tabulations have been arranged for convenience in cross-checking features.

Following is an index to electric

range models represented in this year's tabulation:

Make of Range	Page
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Gibson	10
Hotpoint	10
Kelvinator	11
Marion	11
Quality	11
Scotch Maid	12
Thermador	13
Westinghouse	12
Universal	13

A-B		
Name of Manufacturer.....		
B-A Stoves, Inc.		
Battle Creek, Mich.		
Model No.	9070	9060
Price (Suggested F.O.B. list)	9030	..
GENERAL:		
Exterior Dimensions:		
Width (Inches)	39	39
Depth (Inches)	27	27
Height to Cooking Platform (In.)	36	36
Type or Style		
Body Construction		
Exterior Finish: Cooking Top Body	1-Piece Top and Back, Rail	
Acid Resist. Porc. Enamel		
Porcelain Enamel		
Interior Finish	Chrome and White	
Hardware	Backsplasher	Front
Appliance Outlet Location		
SURFACE UNITS:		
Type	Chromalox	
Number of Units	3	4
Number of Heats	7	7
Wattages Large Unit: High....	2000	2000
(2)	1400	1400
(3)	600	600
(4)	500	500
(5)	350	350
(6)	150	150
(7)	105	105
Wattages: Other Units: High....	1200	1200
(2)	700	700
(3)	500	500
(4)	300	300
(5)	175	175
(6)	125	125
(7)	75	75
Well Cooker: Unit Type	Optional	
Number of Heats	6	
Wattages: High	1200	
(2) ....	..
(3) ....	..
(4) ....	..
(5) ....	..
Cooker Well: Material....		
Pail & Lid: Material....		
Cooker Accessories		
Timed?		
Switch Panel Location	Backsplasher	Front
Flush or Recessed	Flush	
Switch Type ....	..	..
Surface Signal Light(s) ....	..	..
OVEN:		
Inside Gross Dimensions (Nema)....	17	17
Height (Inches)	16	14
Width (Inches)	16	16
Depth (Inches)	20	20
Inside Usable Dimensions (In.) ....	..	..
Number of Units	2	2
Type of Units		
Wattages: Upper Unit: Preheat....	..	..
Speed Broil ....	..
Broil ....	..
Bake ....	..
Wattages: Lower Unit: Preheat....	..	
Broil ....	..
Bake ....	..
Type of Thermostat	150° to 550°	
Thermostat Range (°)		
Oven Shelves: Finish ....	..
Insulation Material	Fiberglas	
Top (Inches) ....	..
Sides (Inches) ....	..
Door (Inches) ....	..
Watts Needed to Maintain Oven at 400° F. in 75° Room (Nema)....	..	
Pilot Lights: Number	1	1
Oven Illumination ....	..
Broiler Pan ....	..
Number Utility Drawers (Including Warmer)....	3	3
Warmer Unit Type ....	..
Watts ....	..
Control ....	..
Signal Light ....	..
ADDITIONAL FEATURES:		
Cooking Top Light	Yes	Optional
Timer	Yes	Optional
Minute Minder	Yes	Optional
Condiment Set	Yes	Optional
Extra Oven ....	..	..
Extra Broiler ....	..	..
Other Accessories Not Listed	Table Serving Tray (wood).	

CAVALIER

Cavalier Corp., Chattanooga, Tenn.

K-12 K-35 K-36 K-46

\$89.00 \$119.95 \$144.95 \$204.50

DUTCH OVEN

Globe-American Corp., Kokomo, Ind.

5131E-D 5231E-D

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ELECTROMASTER

Name of Manufacturer.....	Electromaster, Inc., Detroit, Mich.									
Model No.	16-1	15-1	14-1	11-1	41-1	T41-1	39-1	T39-1		
Price (Suggested F.O.B. list)....	\$179.50	\$149.50	\$124.50	\$99.50	\$73.60	\$79.90	\$64.90	\$71.20		
GENERAL:										
Exterior Dimensions:										
Width (Inches)	40	40	40	40	21	21	21	21		
Depth (Inches)	24	24	24	24	24	24	24	24		
Height to Cooking Platform (In.)	36	36	36	36	36	36	36	36		
Type or Style	Table Top									
Body Construction	Unit Type									
Exterior Finish: Cooking Top..	Acid Resistant Porcelain Enamel									
Body	Porcelain Enamel									
Interior Finish.....	Porcelain and Synthetic									
Hardware	Plaskon and Chrome									
Appliance Outlet Location	Right Side Back Plate					Left Side Front Panel				
SURFACE UNITS:										
Type	Tuttle & Kift									
Number of Units	4	4	4	4	4	4	3	3		
Number of Heats	5	5	5	5	3	3	3	3		
Wattages Large Unit: High.....	2200	2200	2200	2200	2000	2000	2000	2000		
(2)	1100	1100	1100	1100	1000	1000	1000	1000		
(3)	550	550	550	550	500	500	500	500		
(4)	275	275	275	275	..	..	..	..
(5)	140	140	140	140	..	..	..	..
(6)										
Wattages: Other Units: High.....	Two at 1300									
(2)	650	650	650	650	600	600	600	600		
(3)	325	325	325	325	300	300	300	300		
(4)	165	165	165	165	..	..	..	..
(5)	80	80	80	80	..	..	..	..
(6)										
Well Cooker: Unit Type	Open									
Number of Heats	5	5	5	5	3	3	3	3		
Wattages: High	1200	1200	1200	1200	1200	1200	1200	1200		
(2)	600	600	600	600	150	150	150	150		
(3)	300	300	300	300	140	140	140	140		
(4)	150	150	150	150	..	..	..	..
(5)	75	75	75	75	..	..	..	..
(6)										
Cooker Well: Material.....	Porcelain Enamel									
Pail and Lid: Material.....	Porcelain, Glass Lid									
Cooker Accessories	4-Position Trivet									
Timed?	No									
Switch Panel Location	Right Side Back Plate									
Flush or Recessed	Flush									
Switch Type	Silver Contact									
Surface Signal Light(s)	Rotary									
OVEN:	4 1 Master									
Inside Gross Dimensions (Nema).....	15 1/4	15 1/4	15 1/4	15 1/4	15 1/4	15 1/4	15 1/4	15 1/4		
Height (Inches)	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2	16 1/2		
Width (Inches)	20	20	20	20	20	20	20	20		
Depth (Inches)	12 3/4 x 16 1/2 x 19 1/4									
Inside Usable Dimensions (In.).....	12 3/4 x 16 1/2 x 19 1/4									
Number of Units	2	2	2	2	1	2	1	2		
Type of Units	Open Coil									
Wattages: Upper Unit: Preheat.....	2500	2500	2500	2500	..	2500	..	2500		
Broil	2500	2500	2500	2500	..	2500	..	2500		
Bake .....	..	..	..	..	..	..	..	..
Wattages: Lower Unit: Preheat.....	2000	2000	2000	2000	3000	..	3000	..		
Broil .....	..	..	..	..	3000	..	3000	..	
Bake	2000	2000	2000	2000	3000	2000	3000	2000		
Type of Thermostat	Hydraulic									
Thermostat Range (°)	175° to 550°									
Oven Shelves: Finish	Bright Nickel Plated									
Insulation Material	Spun Glass									
Top (Inches)	4	4	4	4	2	2	2	2		
Sides (Inches)	2	2	2	2	1 1/2	1 1/2	1 1/2	1 1/2		
Door (Inches)	2	2	2	2	2	2	2	2		
Watts Needed to Maintain Oven at 400° F. in 75° Room (Nema).....	510	510	510	510	550	550	550	550		
Pilot Lights: Number	1	1	1	1	1	1	1	1		
Oven Illumination .....	..	..	..	..	..	..	..	..
Broiler Pan	Automatic, Side									
Number Utility Drawers (Including Warmer).....	3	3	3	1	..	..	..	..
Warmer Unit Type	Open Coil									
Watts	200	200	200	200	..	..	..	..
Control	Toggle Switch									
Signal Light	Yes									
Additional Features: Cooking Top Light	Yes									
Timer .....	..	..	..	..	..	..	..	..
Minute Minder .....	..	..	..	..	..	..	..	..
Condiment Set .....	..	..	..	..	..	..	..	..
Extra Oven .....	..	..	..	..	..	..	..	..
Extra Broiler .....	..	..	..	..	..	..	..	..
Other Accessories Not Listed	Remov. Vent Grille									
	Removable Crumb Tray									

ESTATE

Estate Stove Co., Hamilton, Ohio

616	613	612	610	619	611</

EVERHOT

Name of Manufacturer.....The Swartzbaugh Mfg. Co., Toledo, Ohio
Model No.1005-1006 Capitol
Price (Suggested F.O.B. list)....\$199.50

GENERAL:
Exterior Dimensions:
Width (Inches)40
Depth (Inches)24
Height to Cooking Platform (In.)36
Type or StyleTable-Top Cabinet
Body ConstructionWelded Steel
Exterior Finish: Cooking Top BodyPorcelain Enamel
Interior FinishEnamel
HardwareChromium Plated
Appliance Outlet LocationBacksplasher

SURFACE UNITS:

TypeChromalox
Number of Units4
Number of Heats7

Wattages Large Unit: High....2000
(2)1400
(3)600
(4)500
(5)350
(6)150
(7)125

Wattages: Other Units: High....1500 1200
(2)800 800
(3)700 400
(4)375 300
(5)200 200
(6)175 100
(7)95 75

Well Cooker: Unit Type1200
Number of Heats7
Wattages: High....1200
(2)800
(3)400
(4)300
(5)200
(6)100
(7)75

Cocker Well: MaterialPail and Lid: Material
Cooker AccessoriesTimed?Yes
Switch Panel LocationOn Backsplasher
Flush or RecessedFlush
Switch TypeHart 2-Way Rotary
Surface Signal Light(s)Yes

OVEN:

Inside Gross Dimensions (Nema)
Height (Inches)17
Width (Inches)17
Depth (Inches)19
Inside Usable Dimensions (In.)14 x 17 x 19
Number of Units2
Type of UnitsOpen
Wattages: Upper Unit: Preheat....2500
Speed Broil2500
Broil2500
Bake200
Wattages: Lower Unit: Preheat....2500
Speed Broil
Broil
Bake
1725
Hart Auto. Reset
Thermostat Range (°)Room Temp. to 550°
Oven Shelves: FinishHard Bright Nickel
Insulation MaterialMineral Wool
Top (Inches)3
Sides (Inches)2
Door (Inches)2
Watts Needed to Maintain Oven a 400° F. in 75° Room (Nema)....475
Pilot Lights: Number2
Oven IlluminationYes
Broiler Pan
Number Utility Drawers (Including Warmer)....3
Warmer Unit TypeOpen
Watts375
ControlSwitch
Signal LightYes

ADDITIONAL FEATURES:

Cooking Top LightYes
TimerYes
Minute MinderYes
Condiment SetYes
Extra Oven
Extra Broiler
Other Accessories Not ListedOven Humidity Control

FLORENCE

Florence Stove Co., Gardner, Mass.
E113D E133D

Table-Top Cabinet
Welded Steel
Porcelain Enamel
Porcelain Enamel
Enamel
Chromium Plated
Backsplasher

T.K. or Chromalox

Chromalox Heatflo

3 3 3
7 7 7

T.K. Chromalox

Rod Ring Rod Heatflo

2100 2000 2100 2000

1350 1400 1100 1100

750 600 1000 900

525 500 525 500

337 350 275 275

187 150 250 225

131 125 131 125

1250 1200 1250 1200

700 700 700 700

550 500 550 500

313 300 313 300

175 175 175 175

137 125 137 125

78 75 78 75

Open Unit

5 5 5

7 7 7

Ring

5 5 5

7 7 7

Porc. Enamelled Pot

Glass

Trivet

Front

Flush

Rotary

Yes

Porcelain

Glass Lid

Trivet

Trivet, Bskt.

Front

Back.

Flush

Recessed

Slanting

Rotary, Silver Contact

All

11 1/2 h x 15 w x 18 1/2 d

20 20 20

11 1/2 h x 15 w x 18 1/2 d

2 2 2

Open

2900 2900 2900

2900 2900 2900

500 500 500

2200 2200 2200

2200 2200 2200

2200 2200 2200

Hydraulic

150° to 550°

Rustproof

Fiberglas

—5 Inches Compressed to 2 Inches

—5 Inches Compressed to 2 Inches

—5 Inches Compressed to 2 Inches

1 1 1

Yes

Enamelled Steel

Cabinet

3 3 3

Closed

500

Off-On

Yes

Yes

Fluorescent

Yes

GENERAL ELECTRIC

Name of Manufacturer..... General Electric Co., Bridgeport, Conn.
 AP1- AP4- CT1- CD3- DD2-
 42C8 42C8 42C9 42C9 42C9
 Model No.
 Price (Suggested F.O.B. list)..... \$99.50 \$108.50 \$108.95 \$166.75 \$244.25

GENERAL:
 Exterior Dimensions:
 Width (Inches) 19 1/2 19 1/2 37 37 39
 Depth (Inches) 25 25 25 25 25
 Height to Cooking Platform (In.) 36 36 36 36 36
 Type or Style Base
 Body Construction One-Piece Steel
 Exterior Finish: Cooking Top Acid Resistant Porcelain Enamel
 Body Glyptal Porcelain Enamel
 Interior Finish Glyptal Porcelain Enamel
 Hardware Metal
 Appliance Outlet Location Front Backsplasher

SURFACE UNITS:
 Type Calrod (Tubular)
 Number of Units 3 4 3 3 3
 Number of Heats 5 5 5 5 5
 Wattages: Large Unit: High 2100 2100 2100 2100 2100
 (2) 840 840 840 840 840
 (3) 505 505 505 505 505
 (4) 210 210 210 210 210
 (5) 125 125 125 125 125
 (6) None
 (7) None
 Wattages: Other Units: High 1250 1250 1250 1250 1250
 (2) 690 690 690 690 690
 (3) 310 310 310 310 310
 (4) 170 170 170 170 170
 (5) 75 75 75 75 75
 (6) None
 (7) None
 Well Cooker: Unit Type None Open Coil
 Number of Heats 5 5 5
 Wattages: High 700 700 1200
 (2) 400 400 400
 (3) 175 175 265
 (4) 100 100 100
 (5) 45 45 65
 (6) None
 (7) None
 Cooker Well: Material None Blue Vit. Enamel on Steel
 Pail and Lid: Material None White Vit. Enamel on Steel
 Cooker Accessories None Trivet Triv., Fry B.
 Timed? None Cooker Not Timed
 Switch Panel Location Front Backsplasher
 Flush or Recessed Flush
 Switch Type Rotary Reversible Silver Contacts
 Surface Signal Light(s) No Yes

OVEN:
 Inside Gross Dimensions (Nema).....
 Height (Inches) 15 15 15 15 15
 Width (Inches) 16 16 16 16 16
 Depth (Inches) 20 1/4 20 1/4 20 1/4 20 1/4 20 1/4
 Inside Usable Dimensions (In.) 11 x 15 x 20 1/4
 Number of Units 2 2 2 2 2 ea.
 Type of Units Open Coil
 Wattages: Upper Unit: Preheat 1600 1600 1600 1600 1600
 Speed Broil 4000 4000 4000 4000 4000
 Broil 2400 2400 2400 2400 2400
 Bake 400 400 400 400 400
 Wattages: Lower Unit: Preheat 2400 2400 2400 2400 2400
 Broil 2400 2400 2400 2400 2400
 Bake 2400 2400 2400 2400 2400
 Type of Thermostat Hydraulic
 Thermostat Range (°) 140° to 500°
 Oven Shelves: Finish Gun Metal
 Insulation Material Rock Wool, Glass Wool
 Top (Inches) 1 1/2 1 1/2 2 1/2 2 1/2 2 1/2
 Sides (Inches) 1 1/2 1 1/2 1 1/2 1 1/2 2 1/2
 Door (Inches) 1 1/2 1 1/2 1 1/2 1 1/2 1 1/2
 Watts Needed to Maintain Oven at 400° F. in 75° Room (Nema).....
 Pilot Lights: Number 1 1 1 1 1
 Oven Illumination No Yes
 Broiler Pan Blue Porc. Enamel White
 Number Utility Drawers (Including Warmer).....
 Warmer Unit Type
 Watts
 Control
 Signal Light No

ADDITIONAL FEATURES:
 Cooking Top Light Yes Yes
 Timer Yes Yes
 Minute Minder Yes Yes
 Condiment Set Yes Yes
 Extra Oven Yes Yes*
 Extra Broiler
 Other Accessories Not Listed
 "Tripl-Oven." Yes Utensil Tray

KELVINATOR

Kelvinator Div., Nash-Kelvinator Corp., Detroit

ER-421 ER-421A ER-423C ER-427 ER-429
 \$117.95 \$134.95 \$174.95 \$192.95 \$214.95

39 39 39 39 39
 25 25 25 25 25
 36 36 36 36 36
 Cabinet with Recessed Base
 One-Piece Welded Steel
 Acid-Resisting Porcelain
 Straight Porcelain
 Straight Porcelain
 White Plastic and Metal Handles
 Right Backsplash 2 on Center panel

Chromalox or T.K.

3 3 3 3 3
 7 7 7 7 72000 2000 2000 2000 2000
 1400 1400 1400 1400 1400
 600 600 600 600 600
 425 425 425 425 425
 350 350 350 350 350
 150 150 150 150 150
 105 105 105 105 105
 1200 1200 1200 1200 1200
 700 700 700 700 700
 500 500 500 500 500
 300 300 300 300 300
 175 175 175 175 175
 125 125 125 125 125
 75 75 75 75 75

Heatflo Ring or Rod Ring

3 3 3
 7 7 72000 2000 2100 2000
 1100 1400 1100 1400
 900 600 1000 600
 500 500 700 500
 275 350 360 350
 225 150 330 150
 125 105 160 105
 1200 1200 1250 1200
 700 700 700 700
 500 500 550 500
 300 300 420 300
 175 175 233 175
 125 125 187 125
 72 72 100 72

Open

7 7 7 7 7

1200 1200 1200 1200 1200

700 700 700 700 700

500 500 500 500 500

300 300 300 300 300

175 175 175 175 175

125 125 125 125 125

75 75 75 75 75

Porcelain on Steel

Pail: Porc. on Steel; Lid: Heat Resisting Glass

Trivet *

Yes

Front Left

Recessed

Bi-Rotary Silver Contact

Yes Yes Yes

16 16 16 16 16

16 16 16 16 16

19 1/4 19 1/4 19 1/4 19 1/4 19 1/4

12 1/2 x 14 1/2 x 19 9 1/2 x 14 1/2 x 19

2 2 2 2 2

Open Coil (2)

2800 2800 2800 2800 2800

2800 2800 2800 2800 2800

2400 2400 2400 2400 2400

2400 2400 2400 2400 2400

Hydraulic with Automatic Preheat Cutout

150° to 550°

Plated Steel

Fiberglas

3 3 3 3 3

2 2 2 2 2

1 1/2 1 1/2 1 1/2 1 1/2 1 1/2

533 533 533 533 533

2 2 2 2 2

Yes Yes Yes

Porcelain Enamel with Plated Steel Rack

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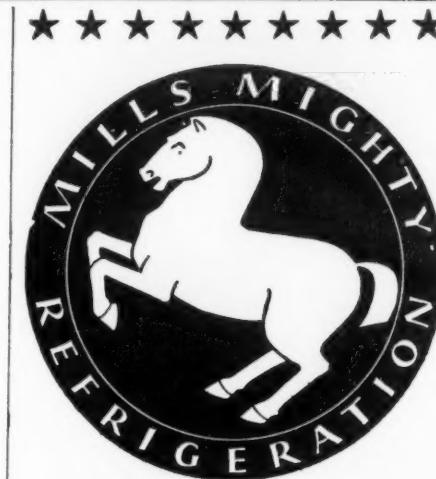
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THERMADOR

Name of Manufacturer.....	Thermador Electrical Mfg. Co., Los Angeles, Calif.			
Model No.	T-19	T-30	T-40-H	T-51
Price (Suggested list price F.O.B. factory).....	..	..	..	..
GENERAL:				
Exterior Dimensions:				
Width (Inches)	22%	38	44 1/2	44 1/2
Depth (Inches)	24	24	24	24
Height to Cooking Platform (Inches)	36	36	36	36
Type or Style	Apt. H.	Base	2 Ovens	
Body Construction	Wrap Around All Steel			
Exterior Finish: Cooking Top	Acid-Resistant Porcelain Enamel			
Body	Porcelain Enamel			
Interior Finish.....	Plastic and Chrome			
Hardware	Front	Blacksplash	Front	
Appliance Outlet Location				

UNIVERSAL

Landers, Frary & Clark, New Britain, Conn.								
1654R	1652R	1651R	1051R	1050R	1659R	1659SR	1657R	
\$299.95	\$219.95	\$179.95	\$154.95	\$113.50	\$214.95	\$194.95	\$102.00	
40	40	40	40	40	40	40	25	
25	25	25	25	25	25	25	21 1/2	
36	36	36	36	36	36	36	36	
Table Top								
Cubicle Style Inner Wrap Around								
Acid Resisting Porcelain Enamel								
Porcelain Enamel								
Exterior Sheets Porcelain Both Sides								
Plastic Ends Metal Centers								
Upper Right Hand Backsplasher								
Switch Panel								



Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.

★ ★ ★ ★ ★ ★ ★ ★



DEFROST

WATER

DEFROST

FOR FREON
METHYL CHLORIDE
SULPHUR DIOXIDE
AMMONIA, and BRINE

LICENSES IN U.S.A.

Mills Mfg. Co.
Hartford, Conn.

Kramer-Trenton Co.
Trenton, N. J.

U.S.A. No. 2,219,383
CANADA No. 394,209
NEW ZEALAND No. 63,359
OTHERS PENDING

REFRIGERATION

Engineering, Inc.

California, U.S.A.

GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-3, Beloit, Wis.

The Machine For
Your Next Job...

If it's a refrigeration job
...no matter how big or
how small...we can sup-
ply Lipman equipment
to fit the specifications.

Let us work with you.

GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-3, Beloit, Wis.

Model 153
Water-cooled
Machine



For 1942—most complete range of styles and
sizes—12 to 71.5 cu. ft.—in the industry.
New modern styling—priced for real value.



Reach-in
CABINETS

Midwest
Mfg. Company

GALESBURG, ILLINOIS

Established 1854

CURTIS
REFRIGERATION

AIR CONDITIONING & COMMERCIAL

Curtis Refrigerating Machine Division

of Curtis Manufacturing Company

1912 Kienlen Ave.

St. Louis, Mo.

3 CATALOGS IN 1

HERMETIC UNITS - COMPRESSORS - PARTS

FRIGIDAIRE - KELVINATOR - NORGE - G-E

Complete Line Refrigeration Parts - Tools - Supplies

WRITE FOR YOUR COPY ON YOUR LETTERHEAD

SERVICE PARTS CO.

MELROSE PARK, ILLINOIS

HEAT TRANSFER EQUIPMENT

MARLO
COIL COMPANY

SAINT LOUIS, MISSOURI

78,246 Household Electric Refrigerators Sold During 1941 In Philadelphia Area At Average Retail Price of \$161

PHILADELPHIA—Sales of household electric refrigerators in the Philadelphia metropolitan area for 1941 totaled 78,426 units, at an average price of \$161 per unit, according to reports made to Electrical Association of Philadelphia.

This is an increase of 21% over the 64,496 units sold in 1940, and an increase of 28% over the average price of \$152 for the 1940 sales.

The report covers sales in Phila-

delphia, Bucks, Montgomery, Delaware, and Chester counties, and includes sales of the following makes: Coldspot, Crosley, Frigidaire, Gibson, General Electric, Hotpoint, Kelvinator, Leonard, Norge, Philco, Stewart-Warner, and Westinghouse.

Sales reported by the Philadelphia Electric Co., the utility, about held their own at approximately 12% of total sales, but the number sold, 9,899 represented an increase of 2% over the number sold in the previous year. Average price of the utility refrigerator sale was \$174, as contrasted to \$169 in 1940.

April and May were the top months in the sale of refrigerators, with April being the leader. This is a variation from the monthly trend in other years in which May and June have generally been the top months.

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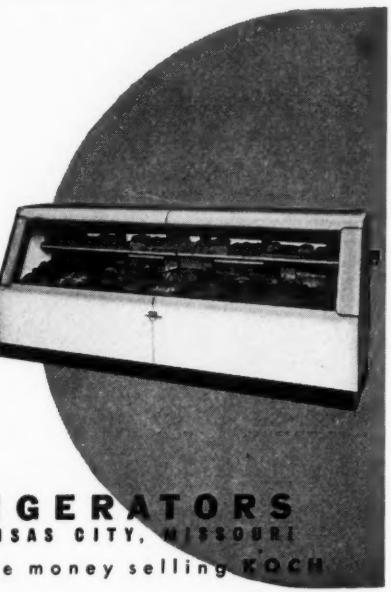
April and May were the top months in the sale of refrigerators, with April



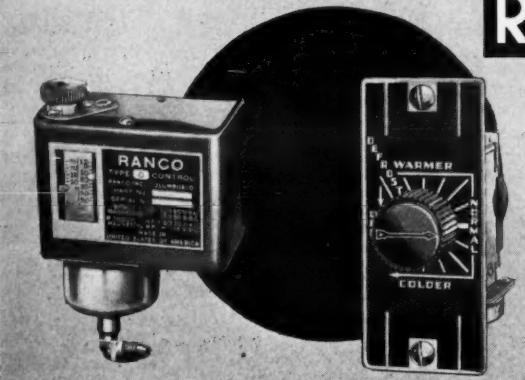
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FOR FREEZING AND STORING FOODS ON THE FARM—IN THE HOME

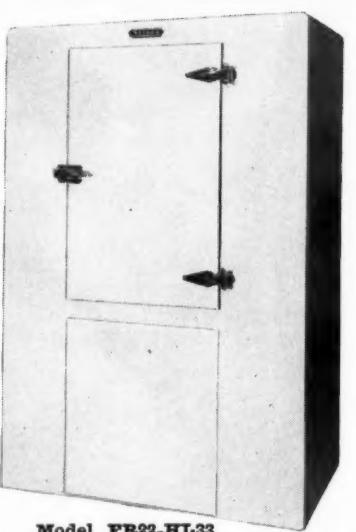
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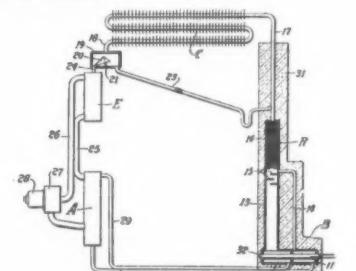
Cases, Coolers, Reach-Ins. Beer display and storage cabinets

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PATENTS

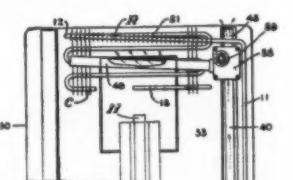
Weeks of Feb. 3 & 10

2,271,542. **RECTIFIER FOR REFRIGERATING SYSTEMS.** Curtis G. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Aug. 8, 1936, Serial No. 94,935. 25 Claims. (Cl. 62—119.5.)



1. In an absorption refrigerating system, having a boiler system and a condenser, a reflux rectifier comprising a vessel adapted to receive refrigerant vapor and absorption liquid vapor from the boiler system, means for insulating said vessel and means for conveying a portion of the refrigerant condensed in the condenser to said vessel to aid in the removal of the absorption liquid vapor from the refrigerant vapor therein.

2,271,543. **REFRIGERATION.** Curtis G. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Oct. 10, 1938, Serial No. 234,164. 13 Claims. (Cl. 62—5.)

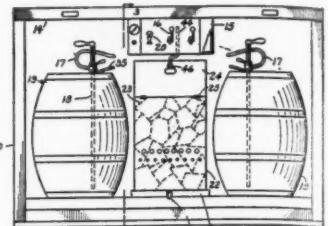


1. In an absorption refrigerating apparatus including a boiler, and an air-

cooled rectifier, fuel burning means for heating the boiler, means for leading products of combustion into heat exchange relation with said air-cooled rectifier, and means for controlling the quantity of products of combustion being led into heat exchange relation with said rectifier.

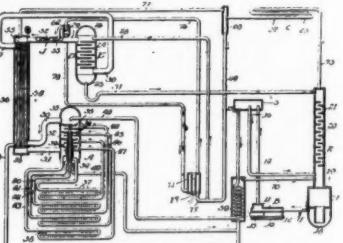
2,271,558. **REFRIGERATION.** William H. Kitto, Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Oct. 5, 1938, Serial No. 233,361. 16 Claims. (Cl. 62—108.5.)

Pa. Application July 11, 1938, Serial No. 283,799. 5 Claims. (Cl. 62—142.)



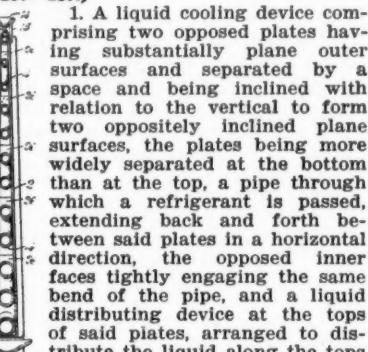
1. In a beverage cooling apparatus, the combination of a heat-insulated cabinet adapted to receive a beverage container, a box within the cabinet adapted to have a solid cooling agent adapted to be liquefied by heat stored therein, the bottom of the box being adapted to receive liquid to a predetermined level cooled by contact with the cooling agent, a cooling tank, a beverage supply line adapted to connect with the beverage container extending to the tank, conduit means extending from the tank and enclosing the beverage supply line for a substantial distance, return means extending from the tank to the box, pump means for circulating cooling liquid through the conduit means, tank and return means, and the box being open at the top portion thereof and provided with perforations in the bottom portion thereof whereby air in the cabinet may circulate through the box and in contact with the cooling agent to be cooled thereby.

2,271,566. **ABSORPTION REFRIGERATING APPARATUS.** Rudolph S. Nelson, Rockford, Ill., and Kurt V. Nesselmann, Berlin, Siemensstadt, Germany, assignors to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application April 13, 1931, Serial No. 529,616. 8 Claims. (Cl. 62—119.5.)



1. An absorber adapted for use in refrigerating apparatus, the combination of a main vessel, a plurality of slightly cupped trays mounted in said vessel and adapted to hold absorption liquid, a baffle plate disposed above each of said trays and a plurality of conduits connected to said vessel, one above each baffle plate whereby absorption liquid may flow from a conduit over a baffle plate, and into a tray.

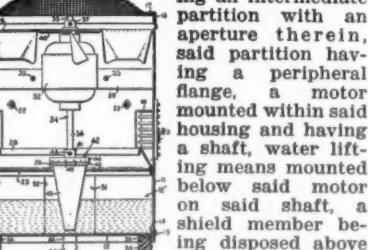
2,271,642. **Liquid Cooling Device.** Herman W. Kleist, Chicago, Ill., assignor to Dole Refrigerating Co., Chicago, Ill., a corporation of Illinois. Application May 28, 1937, Serial No. 145,358. 7 Claims. (Cl. 257—187.)



1. A liquid cooling device comprising two opposed plates having substantially plane outer surfaces and separated by a space and being inclined with relation to the vertical to form two oppositely inclined plane surfaces, the plates being more widely separated at the bottom than at the top, a pipe through which a refrigerant is passed, extending back and forth between said plates in a horizontal direction, the opposed inner faces tightly engaging the same bend of the pipe, and a liquid distributing device at the tops of said plates, arranged to distribute the liquid along the tops of the plates, the said liquid to be cooled passing down by gravity along the outer surfaces of said plates, the incline of the plates causing the liquid to be brought into intimate contact therewith.

2,271,709. **AIR CONDITIONER.** William A. Norris, Alhambra, Calif., assignor to William H. Fabry and Rae H. Fabry, as joint tenants, with right of survivorship. Application Jan. 31, 1941, Serial No. 376,787. 3 Claims. (Cl. 261—51.)

1. In an evaporative cooler, a housing having a closed bottom and a reticulated mesh top and having an intermediate partition with an aperture therein, said partition having a peripheral flange, a motor mounted within said housing and having a shaft, water lifting means mounted below said motor on said shaft, a shield member being disposed above said partition and comprising a portion having a flange engaging said partition flange, means to secure said flanges to the housing, said water lifting means being adapted to raise water from said bottom to a location above said partition, said housing having an air outlet above said partition, and a fan disposed above said motor on said shaft and adapted to direct a column of air upon water on said partition.



2,272,093. **REFRIGERATING APPARATUS.** Alex A. McCormack, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Oct. 24, 1939, Serial No. 301,010. 2 Claims. (Cl. 62—115.)



1. Refrigerating apparatus including a multiple effect compressor having a low pressure suction inlet and high pressure suction inlet for compressing low and high pressure suction gas in a single stage in the same compression chamber, a condensing means for the compressed gas, a first evaporating means having its outlet connected to said low pressure suction inlet and its inlet connected to a refrigerant control device for controlling the flow of refrigerant into said first evaporating means, closed fluid conduit means communicating with the condensing means and with said device for conducting refrigerant from said condensing means to said device, a second evaporating means for evaporating liquid refrigerant in direct contact with the closed fluid conduit means containing the condensed liquid refrigerant flowing from said condensing means to said control device, the outlet of said second evaporating means being connected to said high pressure inlet, the inlet of said second evaporating means being provided with a refrigerant control device connected to said condensing means.

2,271,866. **APPARATUS FOR COOLING BEVERAGES.** Michael A. Martin, Erie, Pa. Application July 11, 1938, Serial No. 283,799. 5 Claims. (Cl. 62—142.)

(Concluded on Page 15, Column 1)



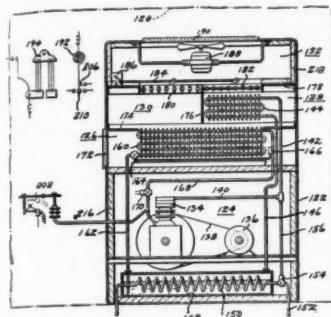
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NEWARK
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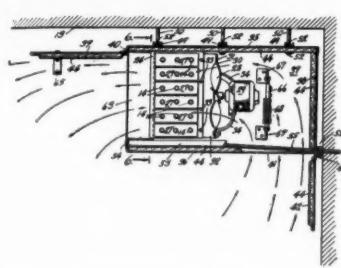
Patents (Cont.)

(Concluded from Page 14, Column 5)
2,272,098. REFRIGERATING APPARATUS. Nelson J. Smith, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Feb. 29, 1936, Serial No. 66,460. 4 Claims. (Cl. 62-6.)



4. In a system for cooling and dehumidifying air for an enclosure, the combination of an evaporator, condenser means, means for translating refrigerant from said evaporator to said condenser means, means for conveying air for said enclosure in heat exchange relation with the evaporator, whereby its dewpoint temperature is decreased, means for conveying air through said condenser means, whereby the dry bulb temperature of the air is increased and the condenser means is cooled, means for circulating extraneous medium for cooling the condenser means, means for varying the flow of said extraneous medium in accordance with condensing requirements, and means responsive to the temperature conditions of the air controlling the passage of air over said condenser means.

2,272,302. DEFROSTING MEANS. Hermann J. Krackwizer, Chicago, Ill. Application May 5, 1939, Serial No. 271,833. 5 Claims. (Cl. 62-2.)



1. In a refrigerating device, the combination of a heat insulated housing having an inlet and an outlet, a cooling unit and a blower in the housing between the inlet and outlet, said blower being operable to supply air to the interior of the housing through the inlet and to discharge the supplied air through the cooling unit and therefrom through the outlet, doors operable to close the inlet and outlet, one or more by-passes leading from the discharge side of the cooling unit to the suction side of the blower to return air discharged through the cooling unit to the suction side of the blower when the doors are closed, gates normally closing said by-passes, means on one of the doors adapted to open said gates when said door is closed, and heating means in the housing, the operation of which is controlled by the opening and closing of the doors.

2,272,614. REFRIGERATOR. Louis William Reinken and Jacob Suter Jammer, London, England, assignors to International Standard Electric Corp., New York, N. Y. Application Sept. 13, 1939, Serial No. 294,648. In Great Britain Sept. 16, 1938. 7 Claims. (Cl. 62-14.)

3. A refrigerator comprising a freezing chamber, a container for receiving a mixture to be frozen in said chamber, a rotatable stirring shaft extending downwardly into said container, laterally projecting paddles on said shaft, said shaft being longitudinally movable during rotation thereof and said paddles being shaped to impart an upward thrust to said shaft while stirring a mixture in said container, an electric motor drivably connected with said shaft, and a switch for operating said motor having an operating lever disposed axially above said shaft whereby said switch is operated by upward movement of said shaft to stop said motor.

2,272,715. MEANS AND METHODS OF FREEZING LIQUIDS. Ernest E. Lindsey, Los Angeles, Calif. Application July 27,

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A complete line in all sizes
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1940, Serial No. 347,982. 10 Claims. (Cl. 62-114.)

1. In a device for freezing liquid material, a cylinder having a smooth inner surface, said surface being adapted to be cooled below the freezing point of said liquid, means for introducing said liquid into the interior of said cylinder, and rotating means operating on said material while in said cylinder, and rotating means operating on said material while in said cylinder, and rotating means including a plurality of resilient blades separately and serially attached to said rotating means and extending toward said surface in a rearwardly tangential direction with respect to the direction of rotation of said rotating means, and terminating adjacent but not touching said surface.

2,272,746. AIR PURIFYING UNIT. Osmund Holm-Hansen, Bridgeport, Conn., assignor to General Electric Co., a corporation of New York. Application Oct. 2, 1940, Serial No. 359,389. 2 Claims. (Cl. 183-4.)

1. In an air deodorizing unit comprising a casing and means for causing rotation thereof, said casing being provided with an inlet opening and an outlet opening, means for causing air to be drawn into said casing through said inlet and expelled through said outlet, said means consisting of a body of an air deodorizing material of the type having a plurality of passages of substantial size extending therethrough for the circulation of air, said passages being of such a size that the material defining said passages serve as the principal air propellant means.

2,272,750. REFRIGERATED APPLE VENDING MACHINE. Ira M. Miller, Yakima, Wash. Application July 20, 1940, Serial No. 346,576. 6 Claims. (Cl. 312-89.)

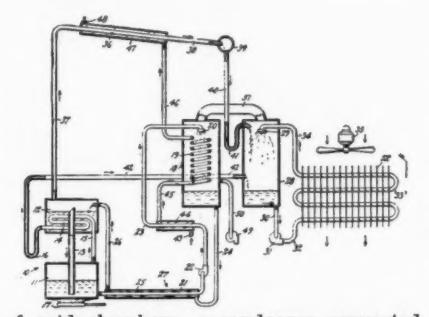
2. In an apple vending machine, an apple storage compartment; an endless belt type apple car-damping unit comprising a voltage electromagnet and a current electromagnet, said electromagnets having core members in the same plane at right angles to an air gap defined by said core members, and in which air gap induction driving torque fluxes are produced by said electromagnets, permanent magnet means in the plane of said core members for producing damping fluxes across such air gap, and supporting structure by which all of said magnet means are secured to form an integral structure.

2,272,764. REFRIGERATING SYSTEM. Lee E. Beard, Fort Wayne, Ind., assignor to General Electric Co., a corporation of New York. Application Oct. 17, 1940, Serial No. 361,637. 10 Claims. (Cl. 62-114.)

1. A refrigerating system including two evaporators, common means for supplying refrigerant to said evaporators, means arranged to control the admission of refrigerant to one of said evaporators and to cooperate with said common supply means for maintaining a predetermined pressure within said one evaporator, means arranged to control the admission of refrigerant to the other of said evaporators and to cooperate with said supply means for maintaining a predetermined pressure in said other evaporator lower than in said one evaporator, shut-off means for preventing the admission of refrigerant to said one evaporator, control means dependent upon the temperature produced by said other evaporator for effecting operation of said supply means, and a time controlled mechanism for operating said refrigerating system in repeated cycles of a pre-determined length of time, each cycle including first opening said shut-off means for admitting refrigerant to said one evaporator and starting the operation of said supply means to supply refrigerant to said one evaporator and operating the same continually for a predetermined length of time and thereafter closing said shut-off means and placing said common supply means for the remainder of the cycle under control of said temperature dependent control means.

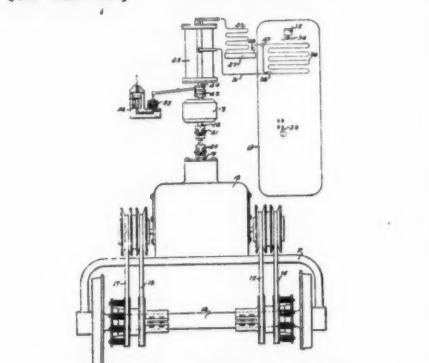
2,272,856. REFRIGERATION. Albert B. Thomas, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application June 25, 1937, Serial No. 150,944. 13 Claims. (Cl. 62-119.5.)

1. A refrigeration system making use of evaporation of water at a low pressure and including an absorber in which water vapor is absorbed into solution in an absorption liquid, a generator in which water vapor is expelled out of solution by heat, said generator having a plurality of chambers, means for heating one of said chambers, and a condenser connected to said first chamber for heating another



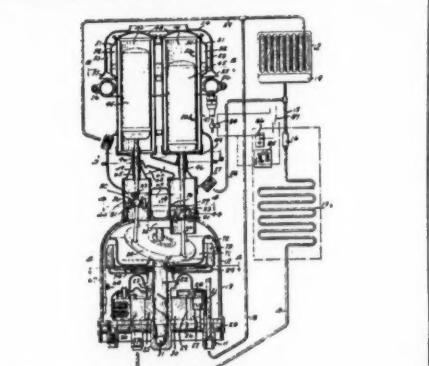
of said chambers, a condenser connected to said second generator chamber, and an evaporator connected to receive liquid from both said condensers.

2,272,913. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Jan. 31, 1935, Serial No. 4,344. Divided and this application Dec. 18, 1937, Serial No. 180,629. 1 Claim. (Cl. 230-29.)



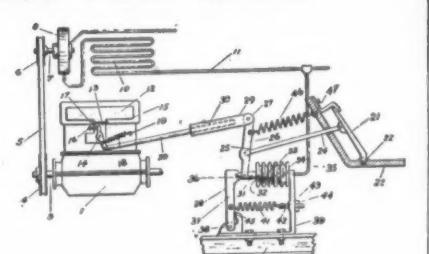
1. In a multiple cylinder compressor, a main housing, a drive shaft within said housing, and a plurality of rotary compressor units driven thereby each of which units comprises means forming a pumping cylinder having a cylindrical wall, inlet and outlet ports for said cylinder, a cylindrical piston of less diameter than said cylinders, means for positioning said piston in varying eccentric relation within said cylinder, means including said drive shaft on which said piston is mounted whereby the axis of said piston is caused to revolve about a center within the cylindrical wall of said cylinder, and speed responsive means for moving said piston into varying eccentric relation with said cylindrical wall in accordance with the speed of said shaft, one of said speed responsive means being responsive to a different speed than another of said speed responsive means.

2,272,925. REFRIGERATING APPARATUS. Harry F. Smith, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application June 26, 1936, Serial No. 87,474. 6 Claims. (Cl. 62-115.)



2. In a refrigerating device, a compressor, a condenser, and an evaporator connected in refrigerant flow relationship, a Stirling cycle heat engine for operating said compressor, and means whereby refrigerant condensed in said condenser is utilized in cooling a portion of said heat engine.

2,272,973. CONDENSER PRESSURE CONTROL. Anthony F. Hoessl, Chicago, Ill., assignor to Auto Coolers, Inc., Chicago, Ill., a corporation of Illinois. Application March 13, 1940, Serial No. 323,733. 3 Claims. (Cl. 62-4.)



1. In an automobile air conditioning system, the combination of a refrigerant vapor compressor driven by the automobile engine and compressing refrigerant vapor into a condenser, said automobile engine being fed with a motive fluid of varying quantity at the will of the operator and means to automatically reduce the maximum potential feed of the motive fluid in response to the occurrence of an abnormally high pressure within said condenser.

2,272,995. APPARATUS FOR CLEANING AIR AND OTHER GASES. Willy Neumann, Bollberg over Bernau, near Berlin, Germany. Application March 20, 1939, Serial No. 263,027. In Germany Dec. 14, 1938. 3 Claims. (Cl. 183-8.)

1. Apparatus for purifying air and other gases, comprising a housing, a liquid bath in said housing, upper and lower guide members in said housing arranged to impart a substantially horizontal direction of flow to the entire air to be purified, said guide members being substantially parallel to each other and the lower of said members being in the form of a closed bottom, and a plurality of

vanes arranged between said guide members to impart a rotating direction of flow to the air passing between said guide members, said vanes being essentially greater in diameter than the distance of said guide members from each other and the walls of said housing being curved and enlarged at least in the region of and above said guide members and above said liquid bath, said vanes extending almost to said curved and enlarged walls.

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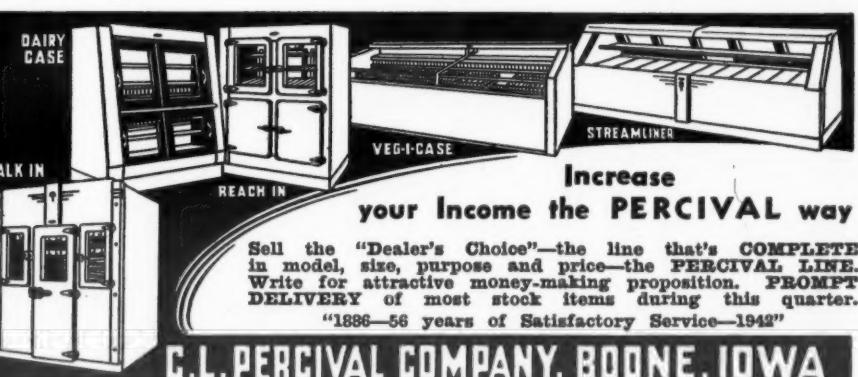
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Refrigerator 'Freeze' Order Is Interpreted

(Concluded from Page 1, Column 1) Interpretation No. 2 of Order L-5-b may help." (Editor's Note: This government interpretation says that refrigerators sold but not delivered prior to Feb. 14 cannot be shipped unless shipment is made pursuant to the provisions of the order, which would seem to make it imperative that they be included in the quota. However, Mr. Hammersley asks for the "facts," which may open the way to an appeal in certain cases.)

Question 3: What should the dealer do with his stock that is over the quota he is permitted to sell under the terms of the freezing order?

Answer: "A dealer with frozen stocks cannot return them to his distributor or wholesaler, but must await further instructions from this office."

Manufacturers Cannot Dispose of Materials

WASHINGTON, D. C.—The War Production Board on Feb. 27 amended the Refrigerator Limitation Order (L-5-c) to prohibit refrigerator manufacturers from disposing of their inventory of materials, semi-processed and processed parts except to other refrigerator companies for use in the manufacture of refrigerators permitted under L-5-c or for repair and maintenance parts.

The amendment also requires each manufacturer to file with the WPB not later than March 15 an estimate of his inventory of raw materials, semi-processed parts, and finished parts that will remain in his hands after he has completed manufacture of his quota of refrigerators.

Under L-5-c the production of refrigerators must be discontinued on or before April 30, 1942. During the two and a half month period between the issuance of the order and the cut-off date a manufacturer is permitted to produce three times the number of units of his February quota.

The amendment is intended to present the use of inventory for non-essential purposes, the WPB declared.

'Times' Co. Names Franklin

NEW YORK CITY—Times Appliance Co., Westinghouse distributor, has appointed Herbert R. Franklin advertising and sales promotion manager.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted," 5¢ per word; minimum charge, \$2.50. Three consecutive insertions, 12½¢ per word; minimum charge \$6.25.

RATES for all other classifications, 10¢ per word, minimum charge, \$5.00 per insertion. Three consecutive insertions, 25¢ per word, minimum charge, \$12.50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

PAYMENT in advance is required for advertising in this column.

POSITIONS AVAILABLE

TIME STUDY and production engineer—Leading meat packing company offers opportunity for advancement, good present salary and permanent employment in a stable food industry for a few men experienced in time study, production control, layout, and standard labor costs. These opportunities not dependent on defense production. Men with mechanical training preferred. Interviews arranged for those who qualify on basis of complete details of personal background, education, and experience as submitted in first letter. All negotiations carried on in strict confidence. Box 1385, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

MODEL No. 25, 5 gallon cabinet type Mills Freezer, equipped with high temperature storage compartment. 3, 60-gallon Mills Hardening Cabinets. Miscellaneous—various make Ice Cream Cabinets. 1, 5 H.P. Universal 4 cylinder Water Cooled Compressor. 1, 2 H.P. Zerozone 2 cylinder Water Cooled Compressor. 2, 1½ H. P. water cooled, 4 cylinder Par Units (two months in service—practically new). 9, York 2 cylinder 1 H.P. water cooled compressors (practically new). Also a few Servels, Frigidaire brand new knockdown hardening cabinets. Other equipment too numerous to mention. What do you need? On sale for client, Attorney Charles A. Pincus, 142 E. 32nd Street, New York, N. Y.

Decorated In the Battle of Production



Fred L. Riggan, Sr., president of the Mueller Brass Co., Port Huron, Mich., receives the coveted Navy "E" pennant, symbolic of outstanding performance in the production of naval ordnance material, from Capt. E. A. Lofquist of the Ninth Naval District. Ceremony was held recently at the Mueller plant.

Priorities & Postwar Plans Discussed By M-H Branch Heads

MINNEAPOLIS—Branch managers of Minneapolis-Honeywell Regulator Co. met for a three-day conference at the Nicollet hotel in Minneapolis to discuss operations under war conditions and to plan a united front in thought and action throughout the whole national field organization, comprising 47 branch and district offices.

Among the things discussed in the three days' agenda were priorities and ways and means to keep the trade informed of priorities' regulations and assist them in getting priority orders. How to maintain customer contacts under war conditions was another topic.

In advertising, the company will continue to keep its name before the trade and its customers, while at the same time giving full support to the war effort.

A feature of the meeting was a discussion on postwar planning—it being the unanimous opinion of those present that such planning was imperative and worthy of immediate consideration. A committee will be appointed by C. B. Sweatt, vice president in charge of sales, who presided at the meetings, to research this problem.

Those in attendance from out of town were:

Arnold Michelson, vice president, New York City branch; Charles L. Saunders, vice president, Chicago branch; L. Morton Morley, vice president, Brown Instrument division, Philadelphia; A. H. Koch, manager, Atlanta branch; Fred Kaiser, manager, Detroit branch; W. R. Moore, manager, Cleveland branch; C. L. Peterson, manager, San Francisco branch; J. B. Banks, manager, Portland, Ore. branch; R. L. Mallory, manager, Houston branch; B. C. Simons, manager, St. Louis branch; W. A. Reichow, manager, Kansas City branch; H. C. Jenkins, manager, Twin Cities, Minn. branch; W. Murphy, New York City branch.

30 Wis. Dealers Exhibit At Hardware Show

MILWAUKEE—Thirty appliance dealers, chiefly members of the Wisconsin Radio, Refrigeration & Appliance Association, exhibited 1942 appliance lines at the recent forty-sixth annual convention of the Wisconsin Retail Hardware Association, to "bolster morale and public confidence in the appliance industry."

Cutler-Hammer Net Income Totals \$1,498,616

MILWAUKEE—Net income for 1941 for Cutler-Hammer, Inc., after \$250,000 reserve for possible inventory decline and postwar adjustment and \$3,305,242 provision for Federal income and excess profits taxes, totaled \$1,498,616.

Makers of Domestic Laundry Units Given Quota To March 15

(Concluded from Page 1, Column 5) tives of the industry to discuss restrictions beyond that date.

The quotas for the first half of March do not authorize companies to obtain or use materials in excess of quantities authorized under existing orders governing scarce metals or other materials.

The supplementary general limitation order L-6-b provides the following:

During the period beginning March 1, 1942, and ending March 15, 1942:

(1) No Class A manufacturer shall produce more domestic laundry equipment than the greater of the following two limits:

(a) 3,900 units, or (b) 30% of the monthly average of his factory sales of such equipment for the 12 months ending June 30, 1941.

(2) No Class B manufacturer shall produce more equipment than the greater of the following two limits:

(a) 1,875 units of such equipment, or

(b) 32½% of the monthly average of his factory sales of such equipment for the 12 months ending June 30, 1941.

(3) No Class C manufacturer shall produce more equipment than the greater of the following two limits:

(a) 570 units, or (b) 37½% of the

monthly average of his factory sales of such equipment for the 12 months ending June 30, 1941.

(4) No Class D manufacturer shall produce more than 47½% of the monthly average of his factory sales of such equipment for the 12 months ending June 30, 1941.

Priorities Official Sees Producers 'Forced' To Use of DD-25A

(Concluded from Page 1, Column 5) showed how an airplane manufacturer, working on a war order, might issue a P-109 certificate for whatever he needs. The supplier may extend such certificates if the material he supplies is to become incorporated in the plane itself, but if it does not go into the actual plane the supplier may not extend the certificate. He must, however, supply the plane manufacturer's needs.

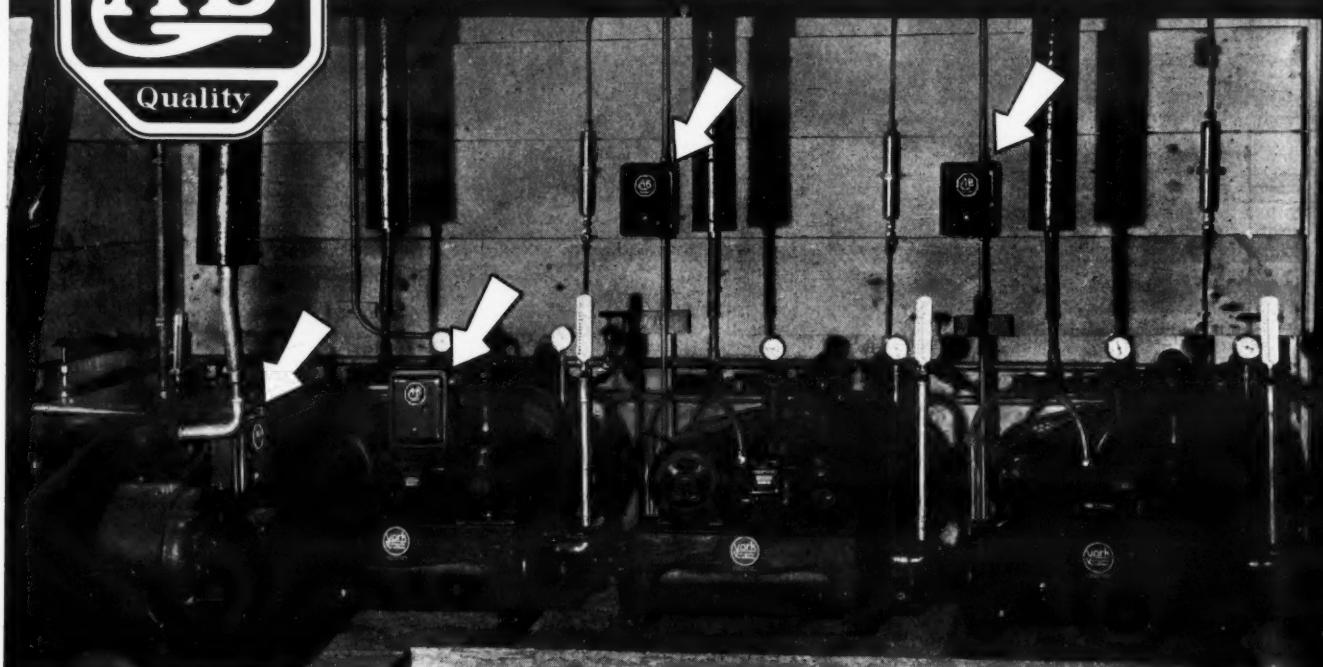
This latter factor tends to deplete the supplier's inventory, which can be replenished only if the supplier is operating under the PRP plan.

This development, said the speaker, will tend to get most suppliers under the PRP plan, and thus enable the WPB to get a complete inventory picture of each supplier.

The speaker declared that the entire priorities system no longer is guided by what is war production and what is essential production, but rather by what is the end use of a material or product, and each demand for materials is granted or refused on this basis.



The Mark of Trouble-free Control



Four Allen-Bradley Bulletin 709 automatic across-the-line solenoid starting switches. These starters provide reliable, maintenance-free control of direct expansion refrigeration units.

Do away with Contact Failures . . . and Prevent Compressor Shutdowns

Trouble-free control is important in air conditioning and refrigeration systems. When motor starters fail because of burned contacts or sticky pivots and pins, you have costly shutdowns—and extra service and repair problems.

Allen-Bradley solenoid motor controls are built to eliminate maintenance.

Contacts are of a patented silver alloy. They have a carrying capacity of at least 10 times their normal horse power rating. When oxides form on these contacts, they do no harm—because the oxides carry current just as perfectly as the original silver alloy contact. That is why Allen-Bradley solenoid contacts

never require filing, cleaning, or dressing. They are maintenance-free.

And you need not worry about bearings, pins, pivots, or flexible jumpers in Allen-Bradley solenoid starters—there aren't any to worry about. The double break contacts are closed

and opened by the simple, straight line movement of the solenoid plunger.

Installation is easy, too. Lots of wiring space and plenty of knockouts in back and all sides of cabinets.

Specify Allen-Bradley trouble-free, maintenance-free solenoid motor controls . . . and avoid plant shutdowns.



There is only one moving part in the Allen-Bradley solenoid starter.

Allen-Bradley Company, 1313 S. First St., Milwaukee

ALLEN-BRADLEY SOLENOID MOTOR CONTROL